IEI Technology Corp.

MODEL:

ICEFIRE-T10A

10.4” Mobile Clinic Assistant with Intel® Atom™ D525 CPU, 2 GB DDR3 SDRAM, 802.11a/b/g/n Wireless, Bluetooth, Mobile 3.5G, LAN, USB, Barcode scanner, Fingerprint Reader RoHS Compliant, IP64 Compliant Front Panel

User Manual

Rev. 1.01 – 21 September, 2011

RoHS Lead Free

Revision

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21 September, 2011	1.01	Added Section 3.5: Smart Card Reader Installation (Optional) Added Section 3.8: Using RFID Reader Added Section 3.9: Using Barcode Scanner Added Chapter 5: ICEFIRE Control Center Modified Table 1-1: Model Variations Modified Section 3.3: Mounting the System (Optional) Modified Figure 3-20: Docking Station I/O Connectors Updated Chapter 6: BIOS Setup
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Table of Contents

1 INTRODUCTION 1

1.1 OVERVIEW 2
1.2 FEATURES 3
1.3 MODEL VARIATIONS 3
1.4 FRONT PANEL 4
1.4.1 Buttons and Indicators 5
1.5 REAR PANEL 6
1.6 SIDE PANELS 7
1.7 TOP PANEL 7
1.8 BOTTOM PANEL 8
1.9 TECHNICAL SPECIFICATIONS 8
1.10 DIMENSIONS 11

2 UNPACKING 12

2.1 UNPACK THE TABLET PC 13
2.2 PACKING LIST 14

3 HARDWARE INSTALLATION 16

3.1 BATTERY INSTALLATION 17
3.1.1 Charge the Battery 19
3.1.1.1 Through the ICEFIRE-T10A 19
3.1.1.2 Through Optional Docking Station 20
3.2 SIM CARD INSTALLATION (OPTIONAL) 21
3.2.1 Supported Frequency Range 22
3.3 MOUNTING THE SYSTEM (OPTIONAL) 23
3.3.1 Docking Station 23
3.3.2 Mounting with Docking Station 25
3.4 I/O CONNECTORS 26
3.4.1 LAN Connection 26
3.4.2 USB Device Connection 26
3.5 SMART CARD READER INSTALLATION (OPTIONAL) 27

3.6 DOCKING STATION I/O CONNECTORS (OPTIONAL) 31
3.6.1 Serial Device Connection *31*
3.6.1.1 RS-232 Serial Port Pinouts 32
3.6.2 VGA Monitor Connection *33*
3.7 POWER-UP THE SYSTEM 34
3.8 USING RFID READER 35
3.9 USING BARCODE SCANNER 38
3.9.1 Barcode Setting *41*

4 DRIVER INSTALLATION 46

4.1 AVAILABLE SOFTWARE DRIVERS 47
4.2 INTEL® GRAPHICS DRIVER 47
4.3 REALTEK LAN DRIVER 49
4.4 GOBI™ 2000 WWAN DATACARD DRIVER 50
4.5 SPEAKER AND MICROPHONE DRIVER 52
4.6 FINGERPRINT READER DRIVER 53
4.7 BARCODE SCANNER DRIVER 55
4.8 BLUETOOTH DRIVER 55

5 ICEFIRE CONTROL CENTER 57

5.1 GETTING STARTED 58
5.2 FEATURES 58
5.3 MODULE STATUS 59
5.4 CALIBRATION 60
5.5 PROGRAMMABLE BUTTONS 62
5.5.1 Action: Open Process *64*
5.5.2 Action: Windows Key Action *65*

6 BIOS SETUP 66

6.1 INTRODUCTION 67
6.1.1 Starting Setup *67*
6.1.2 Using Setup *67*
6.1.3 Getting Help *68*
6.1.4 BIOS Menu Bar *68*
6.2 MAIN 69
6.3 ADVANCED 70

6.3.1 CPU Configuration *70*
6.3.2 SATA Configuration *72*
6.3.3 USB Configuration *73*
6.3.4 H/W Monitor *74*
6.3.4.1 System FAN1 Configuration 75
6.3.5 IEI Feature *77*
6.4 CHIPSET 78
6.4.1 Host Bridge Configuration *79*
6.4.2 South Bridge Configuration *80*
6.4.3 Intel IGD SWSCI OpRegion *81*
6.5 BOOT 83
6.6 SECURITY 84
6.7 EXIT 85

7 SYSTEM MAINTENANCE 87

7.1 SYSTEM MAINTENANCE INTRODUCTION 88
7.2 MOTHERBOARD REPLACEMENT 88

A SAFETY PRECAUTIONS 89

A.1 SAFETY PRECAUTIONS 90
A.1.1 General Safety Precautions *90*
A.1.2 Anti-static Precautions *91*
A.1.3 Product Disposal *92*
A.2 MAINTENANCE AND CLEANING PRECAUTIONS 92
A.2.1 Maintenance and Cleaning *92*
A.2.2 Cleaning Tools *93*

B ONE KEY RECOVERY 94

B.1 ONE KEY RECOVERY INTRODUCTION 95
B.1.1 System Requirement *96*
B.1.2 Supported Operating System *97*
B.2 SETUP PROCEDURE FOR WINDOWS 98
B.2.1 Hardware and BIOS Setup *98*
B.2.2 Create Partitions *99*
B.2.3 Install Operating System, Drivers and Applications *102*
B.2.4 Build-up Recovery Partition *103*

B.2.5 Create Factory Default Image *105*
B.3 SETUP PROCEDURE FOR LINUX 110
B.4 RECOVERY TOOL FUNCTIONS 113
B.4.1 Factory Restore *115*
B.4.2 Backup System *116*
B.4.3 Restore Your Last Backup *117*
B.4.4 Manual *118*
B.5 OTHER INFORMATION 119
B.5.1 Using AHCI Mode or ALi M5283 / VIA VT6421A Controller *119*
B.5.2 System Memory Requirement *121*

C BIOS OPTIONS ***122***

D TERMINOLOGY ***125***

E WATCHDOG TIMER ***129***

F HAZARDOUS MATERIALS DISCLOSURE ***132***

F.1 HAZARDOUS MATERIALS DISCLOSURE TABLE FOR IPB PRODUCTS CERTIFIED AS ROHS COMPLIANT UNDER 2002/95/EC WITHOUT MERCURY 133

List of Figures

Figure 1-1: ICEFIRE-T10A 2
Figure 1-2: Front Panel 4
Figure 1-3: Front Panel Buttons and Indicators 5
Figure 1-4: Rear Panel 6
Figure 1-5: Side Panels 7
Figure 1-6: Top Panel 8
Figure 1-7: Bottom Panel 8
Figure 1-8: Dimensions (units in mm) 11
Figure 3-1: Release Battery Latches 17
Figure 3-2: Battery Installation 18
Figure 3-3: Lock the Battery 18
Figure 3-4: Battery Capacity Indicators 19
Figure 3-5: Windows 7 Power Management Screen 20
Figure 3-6: Insert Batteries to Docking Station 21
Figure 3-7: SIM Card Slot Location 22
Figure 3-8: SIM Card Installation 22
Figure 3-9: Release the Stand 24
Figure 3-10: Lock the Stand 24
Figure 3-11: Place the ICEFIRE-T10A to the Docking Station 25
Figure 3-12: VESA Mounting Retention Screw Holes 25
Figure 3-13: LAN Connection 26
Figure 3-14: USB Device Connection 27
Figure 3-15: Smart Card Reader Installation 28
Figure 3-16: Smart Card Reader Setting 1 28
Figure 3-17: Smart Card Reader Setting 2 29
Figure 3-18: Smart Card Reader Setting 3 29
Figure 3-19: Smart Card Reader Setting 4 30
Figure 3-20: Docking Station I/O Connectors 31
Figure 3-21: Serial Device Connector 32
Figure 3-22: Serial Port Pinouts 32

Figure 3-23: VGA Connector 33
Figure 3-24: Power-up the System 34
Figure 3-25: RFID Reader On/Off Button 35
Figure 3-26: IRFR-110 Icon 36
Figure 3-27: IRFR – Device Type 36
Figure 3-28: Ser Device Type Button Grayed Out 37
Figure 3-29: IRFR – Find Tags 37
Figure 3-30: IRFR – UIDs 38
Figure 3-31: Barcode scanner On/Off Button 38
Figure 3-32: EasySet Window 39
Figure 3-33: EasySet – Communication 39
Figure 3-34: Connection Parameters Window 40
Figure 3-35: Communication – Disconnect 40
Figure 3-36: Barcode Information Display Area 41
Figure 3-37: Barcode Parameters 42
Figure 3-38: Symbologies 43
Figure 3-39: Operating Settings 43
Figure 3-40: Scanning/Triggering 44
Figure 3-41: Beeps/Green Indicator LED 44
Figure 4-1: Graphics Driver Location 48
Figure 4-2: Graphics Media Accelerator Driver 48
Figure 4-3: Realtek LAN Driver Location 49
Figure 4-4: Realtek LAN InstallShield Wizard 50
Figure 4-5: Gobi™ 2000 Module Driver Location 51
Figure 4-6: Gobi™ 2000 Connection Manager Driver Location 51
Figure 4-7: Speaker and Microphone Driver Location 52
Figure 4-8: Realtek HD Audio Driver InstallShield Wizard 53
Figure 4-9: Fingerprint Reader Driver Location 54
Figure 4-10: Fingerprint Reader InstallShield Wizard 54
Figure 4-11: Barcode Scanner Driver Location 55
Figure 4-12: Bluetooth Driver Location 56
Figure 5-1: Control Center 58
Figure 5-2: Module Status 60
Figure 5-3: Calibration 60
Figure 5-4: Tablet PC Settings 61

Figure 5-5: Calibrate Pen or Touch Input Screens 61
Figure 5-6: Button Actions 62
Figure 5-7: Button Actions - Wifi 63
Figure 5-8: Action - Open Process 64
Figure 5-9: Action - Windows Key Action 65
Figure B-1: IEI One Key Recovery Tool Menu 95
Figure B-2: Launching the Recovery Tool 99
Figure B-3: Recovery Tool Setup Menu 100
Figure B-4: Command Mode 100
Figure B-5: Partition Creation Commands 101
Figure B-6: Launching the Recovery Tool 103
Figure B-7: System Configuration for Windows 103
Figure B-8: Build-up Recovery Partition 104
Figure B-9: Press any key to continue 104
Figure B-10: Press F3 to Boot into Recovery Mode 105
Figure B-11: Recovery Tool Menu 105
Figure B-12: About Symantec Ghost Window 106
Figure B-13: Symantec Ghost Path 106
Figure B-14: Select a Local Source Drive 107
Figure B-15: Select a Source Partition from Basic Drive 107
Figure B-16: File Name to Copy Image to 108
Figure B-17: Compress Image 108
Figure B-18: Image Creation Confirmation 109
Figure B-19: Image Creation Process 109
Figure B-20: Image Creation Complete 109
Figure B-21: Press Any Key to Continue 110
Figure B-22: Partitions for Linux 111
Figure B-23: System Configuration for Linux 112
Figure B-24: Access menu.lst in Linux (Text Mode) 112
Figure B-25: Recovery Tool Menu 113
Figure B-26: Recovery Tool Main Menu 114
Figure B-27: Restore Factory Default 115
Figure B-28: Recovery Complete Window 115
Figure B-29: Backup System 116
Figure B-30: System Backup Complete Window 116

Figure B-31: Restore Backup 117
Figure B-32: Restore System Backup Complete Window 117
Figure B-33: Symantec Ghost Window 118

List of Tables

Table 1-1: Model Variations 3
Table 1-2: Technical Specifications 10
Table 2-1: Packing List 15
Table 2-2: Optional Items 15
Table 3-1: Supported Frequency Range 23
Table 3-2: Serial Port Pinouts 32
Table 5-1: Action Description 64
Table 6-1: BIOS Navigation Keys 68

BIOS Menus

BIOS Menu 1: Main 69
BIOS Menu 2: Advanced 70
BIOS Menu 3: CPU Configuration 71
BIOS Menu 4: IDE Configuration 72
BIOS Menu 5: USB Configuration 73
BIOS Menu 6: Hardware Health Configuration 74
BIOS Menu 7: Hardware Health Configuration 75
BIOS Menu 8: IEI Feature 77
BIOS Menu 9: Chipset 78
BIOS Menu 10: Host Bridge Chipset Configuration 79
BIOS Menu 11:South Bridge Chipset Configuration 80
BIOS Menu 12: Intel IGD SWSCI OpRegion 81
BIOS Menu 13: Boot 83
BIOS Menu 14: Security 84
BIOS Menu 15:Exit 85

Chapter

1

Introduction

1.1 Overview

Figure 1-1: ICEFIRE-T10A

The ICEFIRE-T10A is an industrial tablet PC with a 10.4 inch touch/digitizer screen and an IP64 compliant front panel. The ICEFIRE-T10A features a 1.8 GHz Intel® Atom™ D525 with 2 GB 1333 MHz DDR3 SDRAM memory.

Storage needs are met by the preinstalled a 1.8” SSD with Windows 7 operating system.

Wireless networking is enabled through an 802.11a/b/g/n wireless adapter. A Bluetooth 2.1+EDR Class 2 module provides a connection to Bluetooth devices. An optional mobile WWAN module provides a connection to mobile phone networks. Wired options are always available through RJ-45 connector on the rear panel, with one USB port on the side panel for peripherals.

A 3.0 megapixel webcam and microphone provide video conferencing capabilities. The ICEFIRE-T10A also features a barcode scanner and an optional RFID reader for advanced data acquisition.

1.2 Features

Some of the standard features of the ICEFIRE-T10A tablet PC include:

- 10.4” TFT XGA LCD
- Dual-mode input (digitizer and resistive touch)
- Two hot-swappable 1880mAh Li-ion batteries
- Intel® Atom™ D525 dual-core platform
- Support 1D/2D barcode scanner, RFID reader, fingerprint reader and optional smart card reader
- Support Bluetooth, Wi-Fi and WWAN wireless connection
- One Key Recovery
- IP64 compliant front panel protection
- Windows® 7 Embedded OS
- RoHS compliant

1.3 Model Variations

There are six models of the ICEFIRE-T10A series. All of the models support wireless and Bluetooth connection and are equipped with the resistive multi-touch screen. The model numbers and model variations are listed below.

ICEFIRE-T10A	Digitizer	Barcode	HSUPA	RFID	SSD	OS
-HU/2G-R10	Yes	1D/2D	Gobi™ 2000 HSUPA module	Yes	No	No
-TR/2G-R10	No	1D/2D	No	Yes	No	No
-ET/2G-R10	No	No	No	No	No	No
-HU/2G-32S-R10	Yes	1D/2D	Gobi™ 2000 HSUPA module	Yes	32G	Windows 7
-TR/2G-32S-R10	No	1D/2D	No	Yes	32G	Windows 7
-ET/2G-32S-R10	No	No	No	No	32G	Windows 7

Table 1-1: Model Variations

1.4 Front Panel

The front panel of the ICEFIRE-T10A has a 10.4” TFT XGA LCD that supports dual-mode input (digitizer and resistive touch). The ICEFIRE-T10A detects and switches the input mode automatically. The digitizer input mode is the priority if the two input modes are used at the same time.

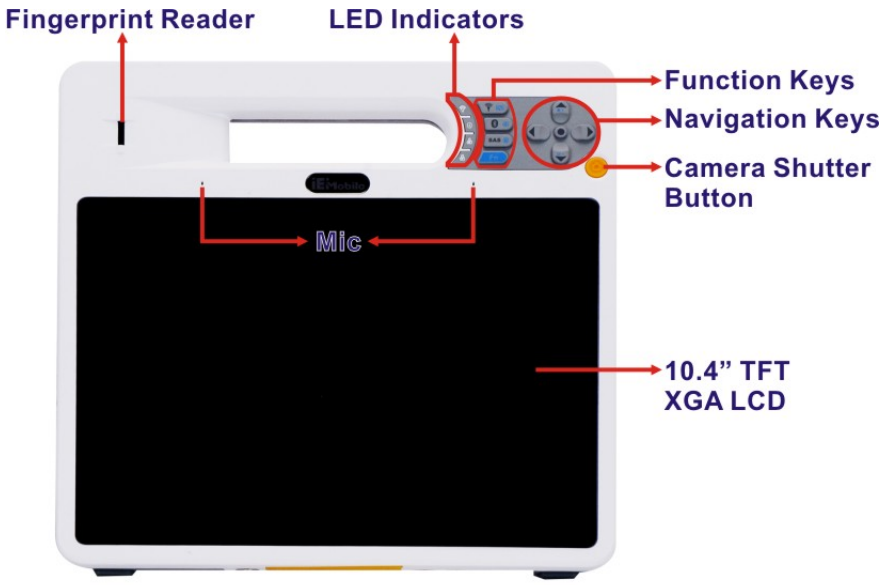


Figure 1-2: Front Panel

1.4.1 Buttons and Indicators

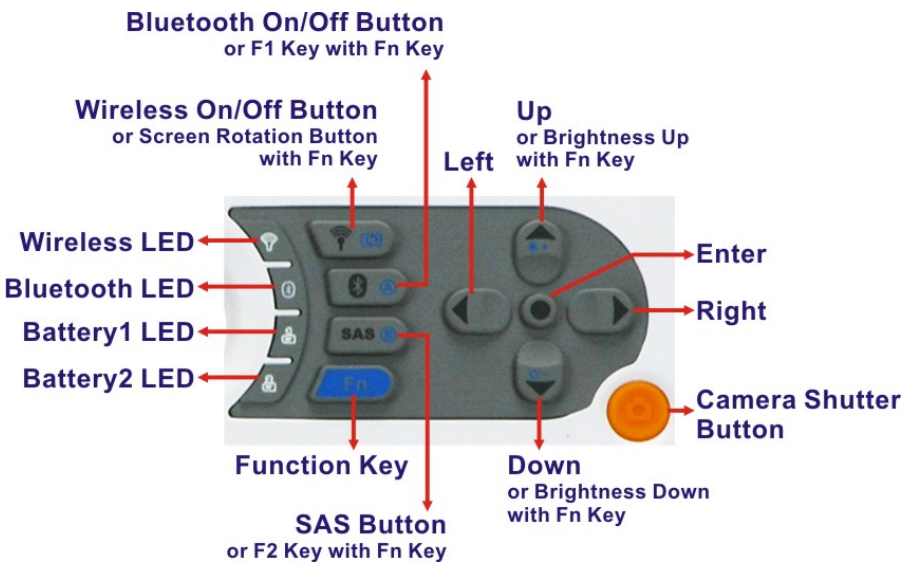


Figure 1-3: Front Panel Buttons and Indicators

There are several buttons and indicators on the front panel of the ICEFIRE-T10A as show in the figure above. Following are descriptions of their functions:

- **Buttons**
  - Wireless on/off button: to enable or disable Wi-Fi connection
  - Bluetooth on/off button: to enable or disable Bluetooth connection
  - SAS (Secure Attention Sequence) button: CTRL-ALT-DEL
  - Camera shutter button: to take a picture
- **Function Key**

  Press the function key and a key together at the same time to perform the following functions:
  - Function key + Wireless on/off button = Rotate the screen clockwise
  - Function key + Bluetooth on/off button = F1. Default setting is to launch Windows Help and Support.
  - Function key + SAS button = F2. Default setting is to rename a file.
  - Function key + Up = Brightness up
  - Function key + Down = Brightness down

- **Navigation Keypad**
  - Up, Down
  - Right, Left
  - Center (select or enter)
- **LED Indicators**
  - Wireless LED: Green light: 3.5G network is enabled
    Green light blinking: Wi-Fi is enabled
  - Bluetooth LED: Blue light shows Bluetooth is enabled
  - Battery 1 status LED: Orange light shows the Battery 1 is being charged
  - Battery 2 status LED: Orange light shows the Battery 2 is being charged

1.5 Rear Panel

The rear panel consists of a 3 megapixel camera, 2 W speaker, LAN, digitizer pen holder and two battery packs.

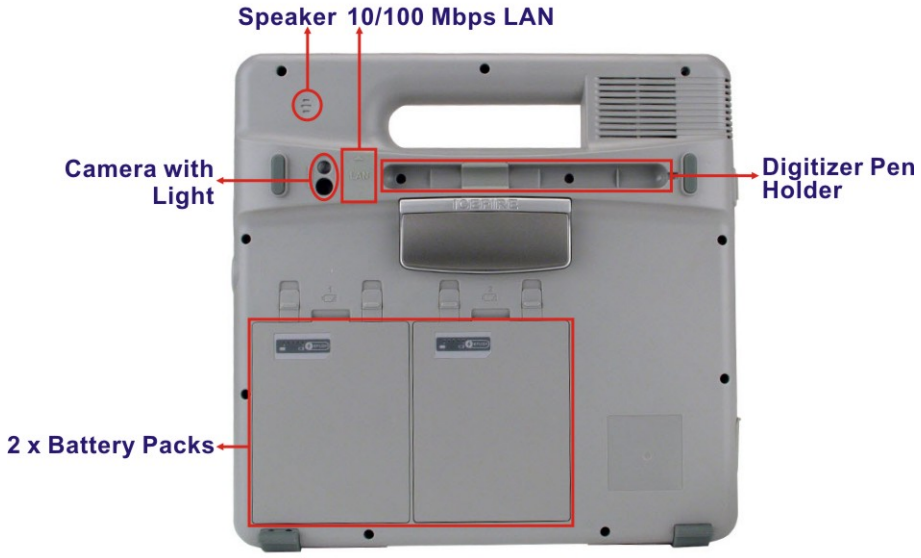


Figure 1-4: Rear Panel

1.6 Side Panels

The side panels have connectors, button and readers as shown in Figure 1-5.

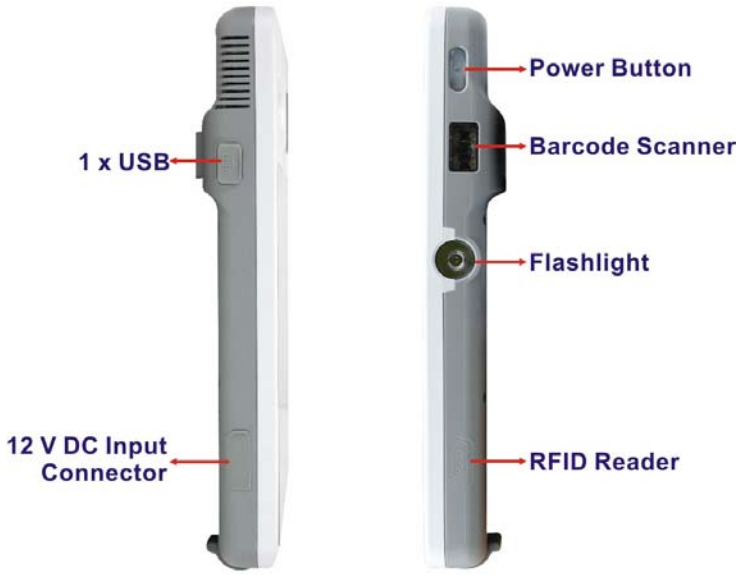


Figure 1-5: Side Panels

CAUTION:

DO NOT shine the light from the flashlight and the barcode scanner in eyes.

1.7 Top Panel

The top panel has three buttons:

- Barcode scanner on/off button
- RFID reader on/off button
- Flashlight on/off button

Figure 1-6: Top Panel

1.8 Bottom Panel

The bottom panel has a docking connector to connect with the optional docking station.

Figure 1-7: Bottom Panel

1.9 Technical Specifications

The technical specifications for the ICEFIRE-T10A systems are listed in the table below.

System	ICEFIRE-T10A
CPU	1.8 GHz Intel® Atom™ D525
Chipset	Intel® ICH8M
Memory	2.0 GB 1333 MHz DDR3 SDRAM pre-installed
OS	Microsoft Windows 7 Embedded
Storage	1 x 1.8” SSD
Audio	1 x 2 W Speaker 1 x Microphone
Camera	1 x 3 megapixel webcam with light
LED Flashlight	1 x LED flashlight
Barcode Scanner	1D/2D barcode scanner

Digitizer	256 levels @ full scale pressure resolution
Display	
LCD	10.4" TFT LCD with resistive touchscreen supports multi-touch and gesture
Max. Resolution	1024 x 768 (XGA)
Brightness (cd/m²)	350
Contrast Ratio	1200:1
LCD Colors	16.2 M
Pixel Pitch	0.0685 (H) x 0.2055 (V)
Viewing Angle (H/V)	176/176
Backlight	LED backlight
Communication	
LAN	1 x 10/100 Mbps RJ-45
Wireless LAN	802.11a/b/g/n
Bluetooth	Bluetooth 2.1 + EDR Class 2
WWAN	W-CDMA/HSUPA
RFID	13.56 MHz RFID compliant with ISO15693 and 14443A
Power	
Power Input	12 V DC input
Power Adapter	60 W Power Adapter Input: 100 V AC ~ 240 V AC, 50/60Hz Output: 12 V DC @ 5 A
Optional Docking Power Adapter	90 W Power Adapter Output: 19 V DC @ 4.74 A
Battery	2 x 11.1 V 1880 mAh Lithium Ion Battery
Physical Character	
Construction Material	ABS + PC plastic front frame
Mounting	Mobile / optional Docking Station (VESA 75 mm x 75 mm)
Dimensions (W x H x D) (mm)	270 x 265 x 29
Operation Temperature	0ºC ~ 40ºC
Storage Temperature	-10ºC ~ 60ºC
Humidity	5% ~ 95% non-condensing
Net weight	1.788 kg with Battery pack (150 g)
IP level (front panel)	IP64

Drop Survival	1.0 M
Safety	CE, FCC, Medical-grade Class B
Connectors and Buttons	
I/O Ports and Switches	1 x 12 V DC input connector 1 x USB 2.0 1 x Ethernet RJ-45 port 1 x RFID on/off switch 1 x Barcode scanner on/off switch 1 x Flashlight on/off switch 1 x Power button with LED
Front Panel Buttons and LED Indicators	1 x Five-way navigation button 1 x Wi-Fi on/off button 1 x Bluetooth on/off button 1 x SAS button 1 x Function key 1 x Camera shutter button 1 x Wi-Fi LED 1 x Bluetooth LED 2 x Battery status LED 1 x Barcode scanner 1 x RFID reader 1 x Fingerprint reader

Table 1-2: Technical Specifications

1.10 Dimensions

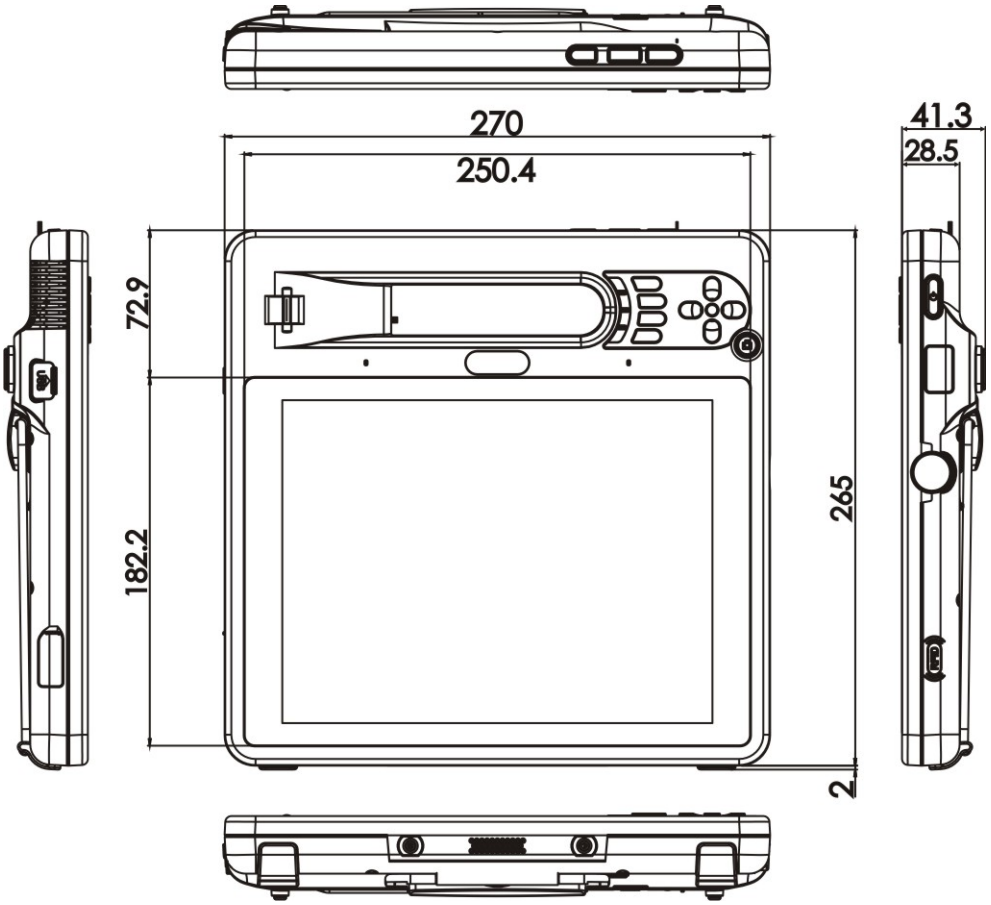


Figure 1-8: Dimensions (units in mm)

Chapter

2

Unpacking

WARNING:

When installing the ICEFIRE-T10A, make sure to:

- **Turn the power off**: Chance of electrocution. Turn off the monitor and unplug it from the power supply.
- **Only let certified engineers change the hardware settings**: Incorrect settings can cause irreparable damage to the product.
- **Take anti-static precautions**: Electrostatic discharge can destroy electrical components and injure the user. Users must ground themselves using an anti-static wristband or similar device.

The installation steps below should be followed in order.

Step 1: Unpack the tablet PC

Step 2: Check all the required parts are included

Step 3: Install and charge the battery packs

Step 4: Connect peripheral devices to the side panels of the tablet PC

Step 5: Connect the power cable

Step 6: Configure the system

2.1 Unpack the Tablet PC

To unpack the tablet PC, follow the steps below:

WARNING!

Only remove the protective plastic cover stuck to the front screen after installation. The plastic layer protects the monitor surface during installation process.

Step 1: Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

Step 2: Open the outside box.

Step 3: Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

Step 4: Open the inside box.

Step 5: Lift the table PC out of the boxes.

Step 6: Remove the peripheral parts box from the main box.

2.2 Packing List

The ICEFIRE-T10A tablet PC is shipped with the following components:

Quantity	Item	Image
1	ICEFIRE-T10A tablet PC	
1	Digitizer pen attached on the rear panel (P/N: 7Z000-UP7110E63C1-RS)	
1	Medical-grade 60 W power adapter (P/N: 63040-010060-020-RS)	
1	Power cable	
2	Battery pack (P/N: 31603-000016-RS)	

Quantity	Item	Image
1	Utility CD (P/N: 7B000-000552-RS)	
1	One Key Recovery CD (P/N: IEI-7B000-000478-RS)	

Table 2-1: Packing List

These optional items are also available.

Quantity	Item	Image
1	Docking station with Medical grade power adapter (P/N: ICEFIRE-T10A-DS01-R10)	
1	Docking station (P/N: ICEFIRE-T10A-DS02-R10)	
1	Smart card reader (P/N: ICEFIRE-T10A-SCR01-R10)	
1	Carrying bag (P/N: ICEFIRE-CB01-R10)	

Table 2-2: Optional Items

Chapter

3

Hardware Installation

3.1 Battery Installation

This section covers the installation of the battery pack.

Step 1: Make sure the battery latches are released. If not, unlock them by sliding latches to the top.

Figure 3-1: Release Battery Latches

Step 2: Install a battery pack as shown in **Figure 3-2**.

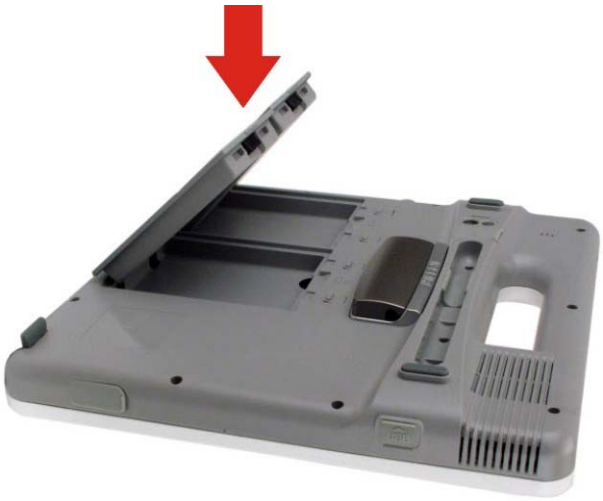


Figure 3-2: Battery Installation

Step 3: Lock the battery by sliding the battery latches down to the battery.

Figure 3-3: Lock the Battery

Step 4: To view the battery capacity, push the battery capacity button on the battery.

Figure 3-4: Battery Capacity Indicators

NOTE:

The two batteries are hot swappable which means the user can replace the battery with a fully charged battery without turning off the system.

3.1.1 Charge the Battery

The battery packs can be charged through the ICEFIRE-T10A or the optional docking station.

3.1.1.1 Through the ICEFIRE-T10A

To charge the battery packs through the ICEFIRE-T10A, follow the steps below.

Step 1: Install the battery in the ICEFIRE-T10A (refer to **Section 3.1**).

Step 2: Connect the ICEFIRE-T10A with a power source through a power cable and the power adapter.

Step 3: Turn on the ICEFIRE-T10A.

Step 4: The system starts to charge the battery packs. The battery capacity can be checked via the capacity indicators on the battery (**Figure 3-4**) or via the Windows 7 power management screen (**Figure 3-5**).

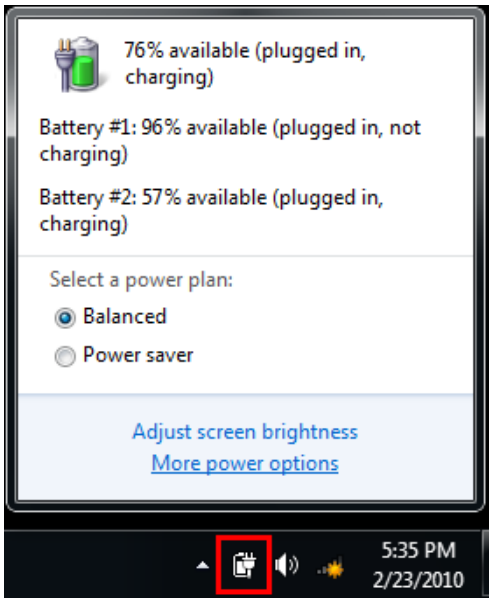


Figure 3-5: Windows 7 Power Management Screen

3.1.1.2 Through Optional Docking Station

To charge the battery packs through the optional docking station, follow the steps below.

Step 1: Insert the battery packs into the docking station as shown in **Figure 3-6**.

Figure 3-6: Insert Batteries to Docking Station

Step 2: Connect the docking station with a power source through a power cable and the power adapter.

Step 3: The docking station starts to charge the batteries.

3.2 SIM Card Installation (Optional)

The ICEFIRE-T10A-HU model is preinstalled a Gobi™ 2000 HSUPA module. To be able to use the 3G network connection, a SIM card must be installed in the ICEFIRE-T10A. Follow the steps below to install a SIM card.

Step 1: Remove the battery slot 2 on the rear panel of the ICEFIRE-T10A.

Step 2: Locate the SIM card slot as shown in **Figure 3-7**.

Figure 3-7: SIM Card Slot Location

Step 3: Insert the SIM card into the slot.

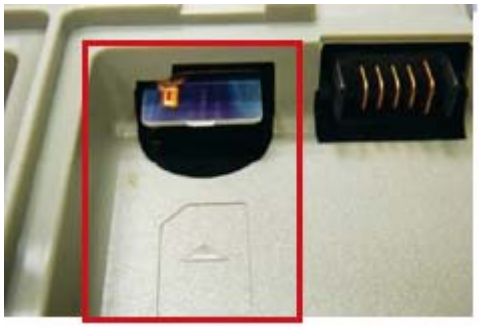


Figure 3-8: SIM Card Installation

3.2.1 Supported Frequency Range

Lists the frequency range supported by the optional Gobi™ 2000 WWLAN datacard.

Radio Mode	Band	UL Frequency (MHz)	DL Frequency (MHz)
WCDMA Release 99	1	1920-1980	2110-2170
HSDPA Release 5	2	1850-1910	1930-1990
HSUPA Release 6	5	824-849	869-894
	6	830-840	875-885
	8	880-915	925-960
GPRS	850	824-849	869-894

EGPRS	900	880-915	925-960
	1800	1710-1785	1805-1875
	1900	1850-1910	1930-1990
CDMA2000 1X **CDMA2000 1xEV-DO** ▪ Rev. 0 ▪ Rev. A	BC0	824-849	869-894
	BC1	1850-1910	1930-1990
GPS	L1		1575.42

Table 3-1: Supported Frequency Range

3.3 Mounting the System (Optional)

The following installation options are available:

- Docking Station
- Wall mounting with optional Docking Station

The installation instructions are described in sections below.

3.3.1 Docking Station

To place the ICEFIRE-T10A on the optional docking station, follow the steps below.

Step 1: Release the docking station stand on the rear panel by unlocking the two latches.

Figure 3-9: Release the Stand

Step 2: Move the stand downward. Slide the two latches again to lock the stand into place.

Figure 3-10: Lock the Stand

Step 3: Insert the ICEFIRE-T10A into the docking station.

Figure 3-11: Place the ICEFIRE-T10A to the Docking Station

3.3.2 Mounting with Docking Station

The optional docking station of the ICEFIRE-T10A can be installed on any VESA compliant mounting device. The VESA mount retention screw holes of the docking station are shown in **Figure 3-12**. Follow the instructions in the user manual of the mounting device to mount the docking station securely.

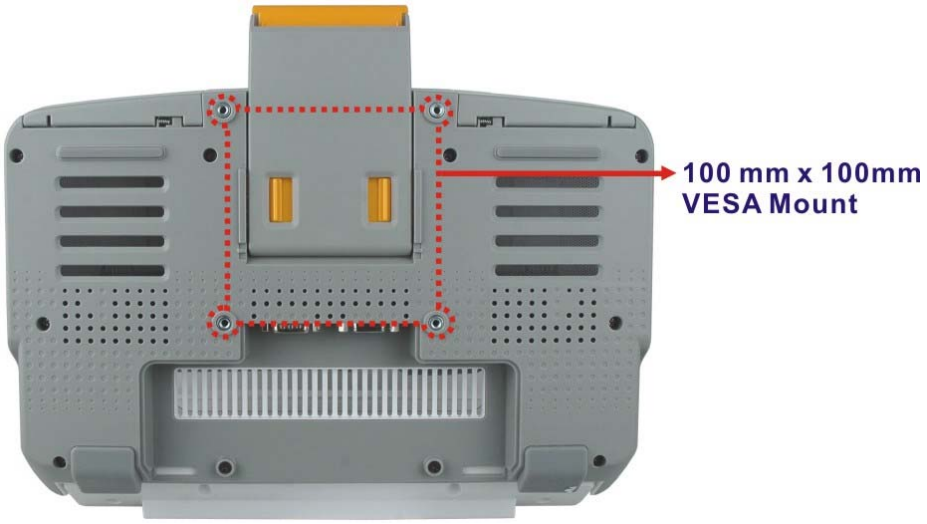


Figure 3-12: VESA Mounting Retention Screw Holes

3.4 I/O Connectors

3.4.1 LAN Connection

The RJ-45 connectors enable connection to an external network. To connect a LAN cable with an RJ-45 connector, please follow the instructions below.

Step 1: Locate the RJ-45 connector on the rear panel. The locations of the USB connectors are shown in **Figure 1-4** in Chapter 1.

Step 2: **Open the rubber cover**.

Step 3: **Align the connectors.** Align the RJ-45 connector on the LAN cable with one of the RJ-45 connectors on the bottom panel. See Figure 3-13.

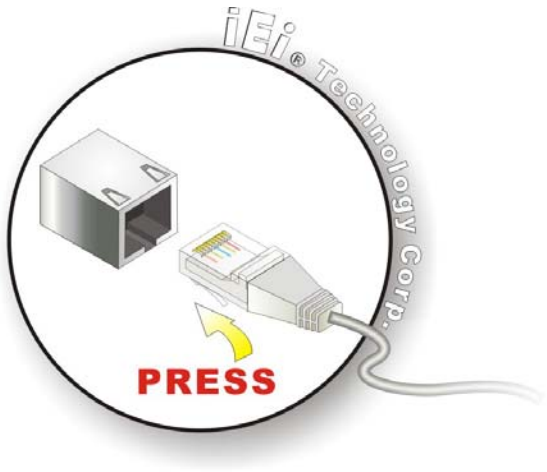


Figure 3-13: LAN Connection

Step 4: **Insert the LAN cable RJ-45 connector.** Once aligned, gently insert the LAN cable RJ-45 connector into the onboard RJ-45 port.

3.4.2 USB Device Connection

There is one USB 2.0 connector located on the right side of the ICEFIRE-T10A. To connect a USB 2.0 or USB 1.1 device, please follow the instructions below.

Step 1: **Located the USB connector**. The location of the USB connector is shown in Figure 1-5.

Step 2: **Open the rubber cover**.

Step 3: **Align the connectors.** Align the USB device connector with the connector on the ICEFIRE-T10A. See figure below.

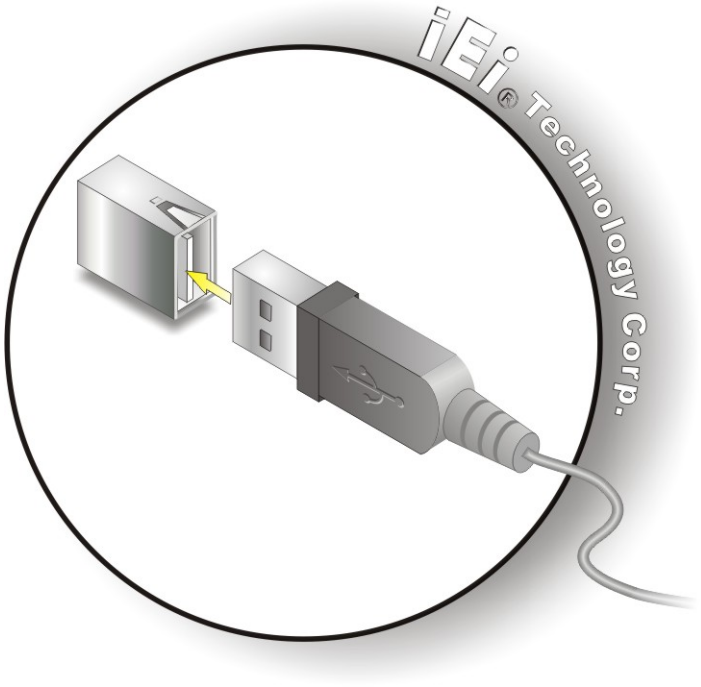


Figure 3-14: USB Device Connection

Step 4: **Insert the device connector.** Once aligned, gently insert the USB device connector into the on-board connector.

3.5 Smart Card Reader Installation (Optional)

To install the optional smart card reader, please follow the steps below.

Step 1: Locate the USB port on the right side panel.

Step 2: Connect the smart card reader to the USB port on the side panel (**Figure 3-15**).

Figure 3-15: Smart Card Reader Installation

Step 3: Turn on the ICEFIRE-T10A (refer to **Section 3.7**).

Step 4: Right click "**Computer**" from the start menu and select "**Manage**".

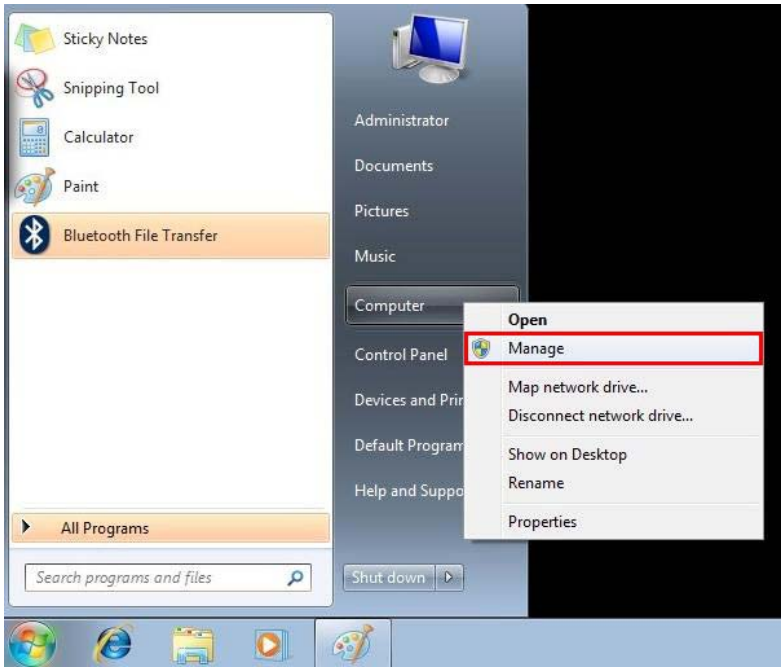


Figure 3-16: Smart Card Reader Setting 1

Step 5: The Computer Management window appears. Select "**Service**" from the left panel. Look for "**Smart Card**" in the service list.

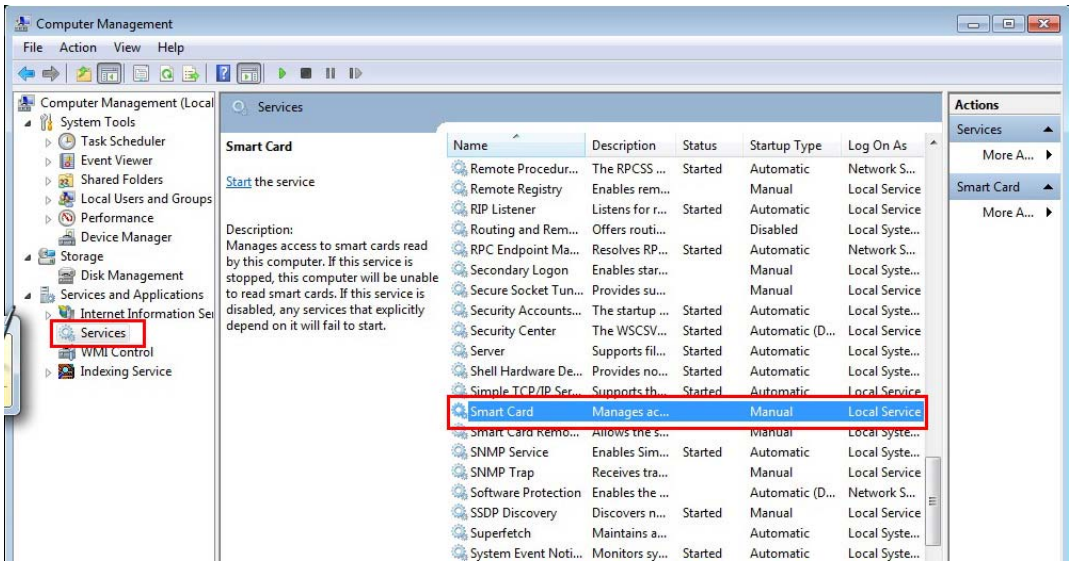

Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
Internet Information Se
Services
WMI Control
Indexing Service
Services
Smart Card
Start the service
Description:
Manages access to smart cards read by this computer. If this service is stopped, this computer will be unable to read smart cards. If this service is disabled, any services that explicitly depend on it will fail to start.
Name
Description
Status
Startup Type
Log On As
Remote Procedur... The RPCSS ... Started Automatic Network S...
Remote Registry Enables rem... Manual Local Service
RIP Listener Listens for r... Started Automatic Local Service
Routing and Rem... Offers routi... Disabled Local Syste...
RPC Endpoint Ma... Resolves RP... Started Automatic Network S...
Secondary Logon Enables star... Manual Local Syste...
Secure Socket Tun... Provides su... Manual Local Service
Security Accounts... The startup ... Started Automatic Local Syste...
Security Center The WSCSV... Started Automatic (D... Local Service
Server Supports fil... Started Automatic Local Syste...
Shell Hardware De... Provides no... Started Automatic Local Syste...
Smart Card Manages ac... Manual Local Service
SNMP Service Enables Sim... Started Automatic Local Syste...
SNMP Trap Receives tra... Manual Local Service
Software Protection Enables the ... Automatic (D... Network S...
SSDP Discovery Discovers n... Started Manual Local Service
Superfetch Maintains a... Automatic Local Syste...
System Event Noti... Monitors sy... Started Automatic Local Syste...
Actions
Services
More A...
Smart Card
More A...

Figure 3-17: Smart Card Reader Setting 2

Step 6: Right click "Smart Card" and select "**Properties**".

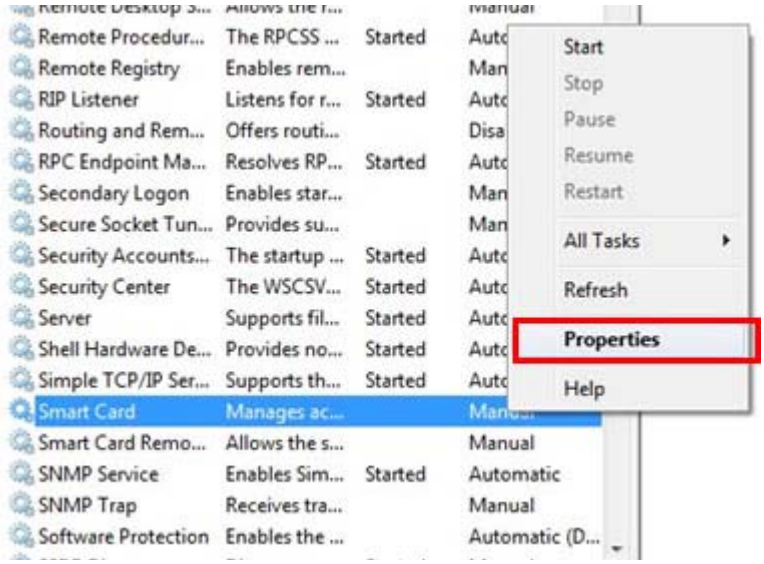


Figure 3-18: Smart Card Reader Setting 3

Step 7: The Smart Card Properties window appears. Change the Startup type to "**Automatic**". Click **Apply**. Click **OK** to exit the properties window.

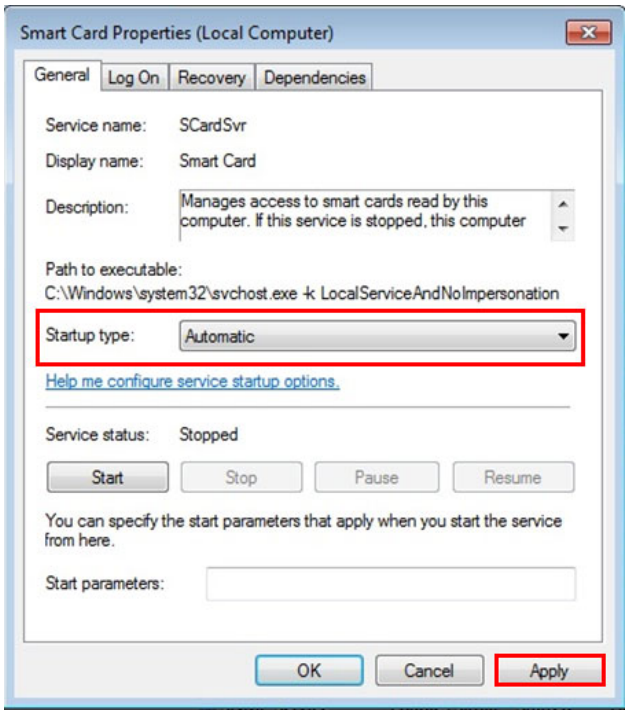


Figure 3-19: Smart Card Reader Setting 4

3.6 Docking Station I/O Connectors (Optional)

The I/O connectors on the rear panel of the ICEFIRE-T10A Docking Station extend the capabilities of the tablet PC but are not essential for operation (except power).

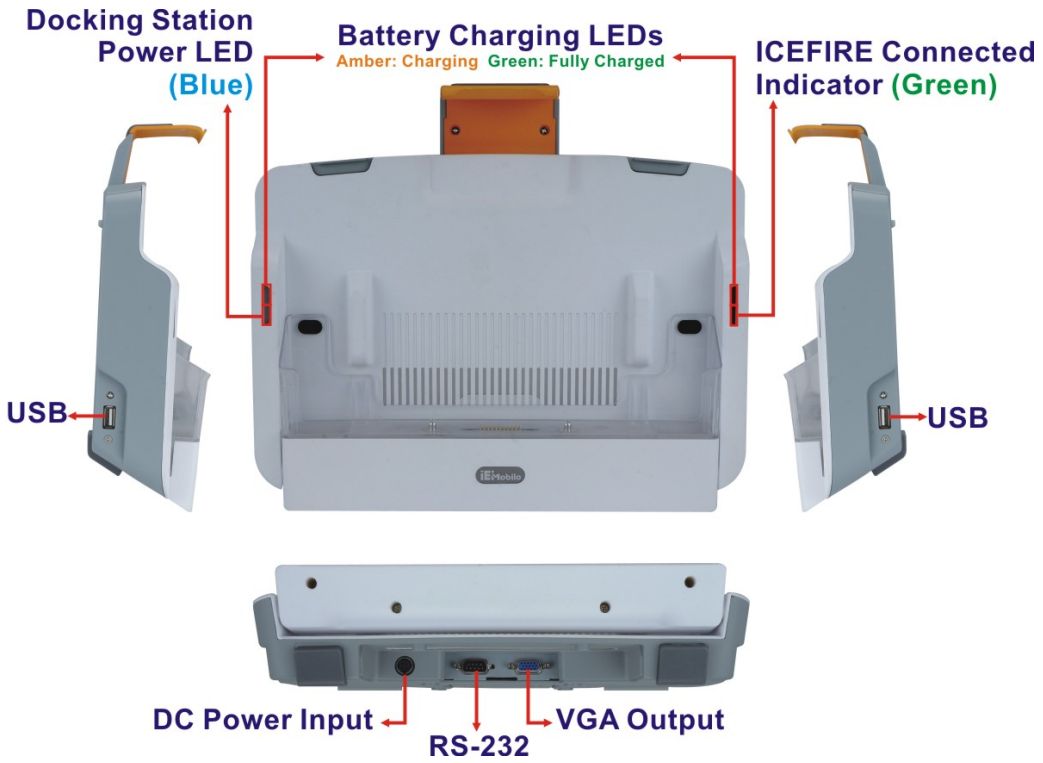


Figure 3-20: Docking Station I/O Connectors

3.6.1 Serial Device Connection

The ICEFIRE-T10A Docking Station has a male DB-9 serial device connector on the bottom panel. The serial device connector is for connecting a RS-232 serial device. Follow the steps below to connect a serial device to the tablet PC.

Step 1: **Locate the DB-9 connector**. The location of the DB-9 connector is shown in **Figure 3-20**.

Step 2: **Insert the serial connector**. Insert the DB-9 connector of a serial device into the DB-9 connector on the bottom panel. See **Figure 3-21**.

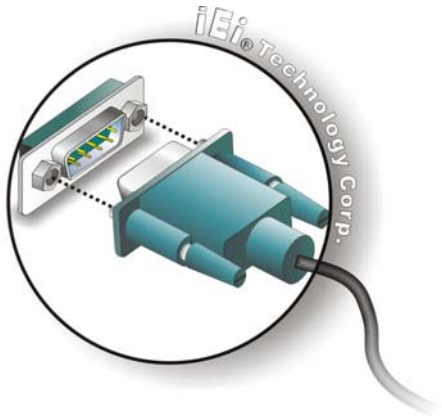


Figure 3-21: Serial Device Connector

Step 3: **Secure the connector**. Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

3.6.1.1 RS-232 Serial Port Pinouts

Following are the RS-232 serial port pinouts.

Pin	Description	Pin	Description
1	DCD	6	DSR
2	RX	7	RTS
3	TX	8	CTS
4	DTR	9	RI
5	GND		

Table 3-2: Serial Port Pinouts

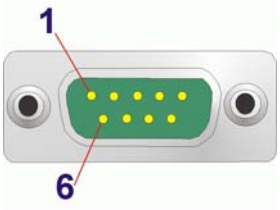


Figure 3-22: Serial Port Pinouts

3.6.2 VGA Monitor Connection

The ICEFIRE-T10A Docking Station has a single female DB-15 connector on the bottom peripheral interface panel. The DB-15 connector is connected to a CRT or VGA monitor. To connect a second monitor to the ICEFIRE-T10A, please follow the instructions below.

Step 1: **Locate the female DB-15 connector**. The location of the female DB-15 connector is shown in **Figure 3-20**.

Step 2: **Align the VGA connector**. Align the male DB-15 connector on the VGA screen cable with the female DB-15 connector on the external peripheral interface.

Step 3: **Insert the VGA connector** Once the connectors are properly aligned with the insert the male connector from the VGA screen into the female connector on the ICEFIRE-T10A. See Figure 3-23.

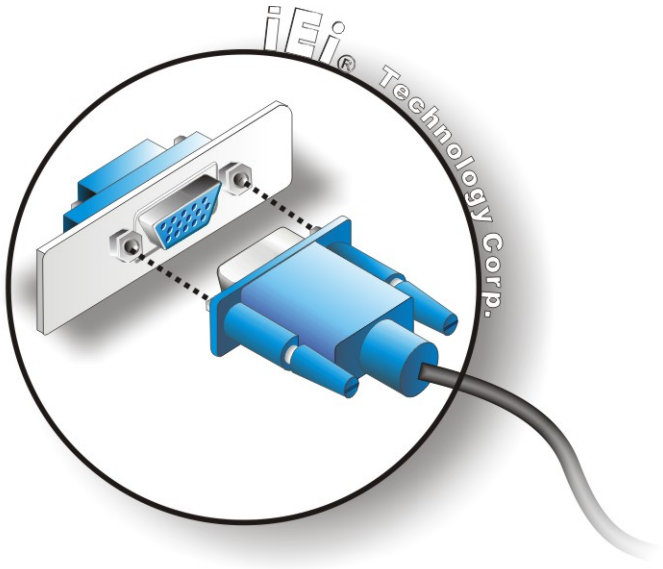


Figure 3-23: VGA Connector

Step 4: **Secure the connector**. Secure the DB-15 VGA connector from the VGA monitor to the external interface by tightening the two retention screws on either side of the connector.

3.7 Power-up the System

The power cable connects the power adapter to the power outlet. The power adapter and power cable are required for operation of the ICEFIRE-T10A.

Step 1: Connect the power adapter to the ICEFIRE-T10A.

Step 2: Connect the power cable to the included power adapter.

Step 3: Connect the power cable to the power outlet.

Figure 3-24: Power-up the System

Step 4: Push the power button for one second to boot up the system. The green LED on the button turns on.

NOTE:

Push the power button again to suspend the system or to resume from the suspend mode. The solid green LED lights on when the system is in suspend mode.

Push the power button for 2-3 seconds to shut down the system. The green LED turns off.

3.8 Using RFID Reader

There is a RFID reader on the side panel (**Figure 1-5**). To enable the RFID reader, follow the steps below.

Step 1: Push the RFID reader button on the top panel to turn on the RFID reader. The blue LED on the button lights on.

Figure 3-25: RFID Reader On/Off Button

Step 2: Double click the **IRFR-110** icon on the desktop.

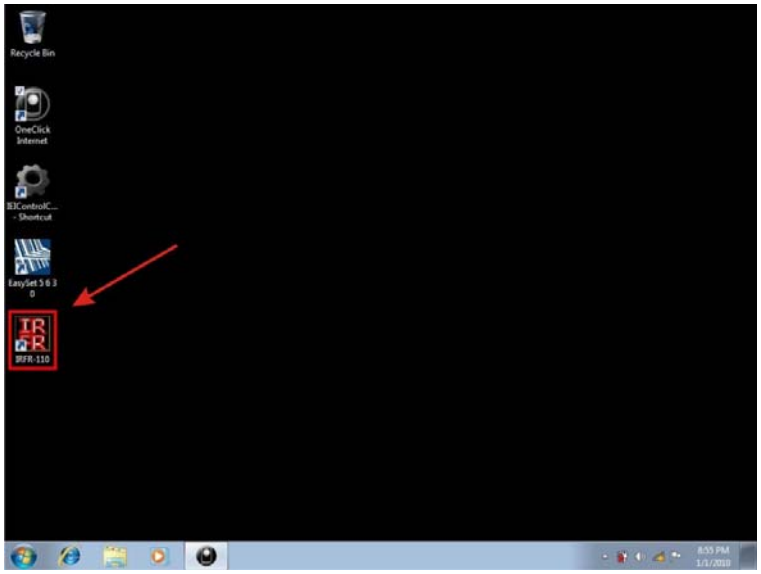


Figure 3-26: IRFR-110 Icon

Step 3: The IRFR-110 window appears.

Step 4: Select **USB** and click the "**Ser Device Type**" button (**Figure 3-27**).

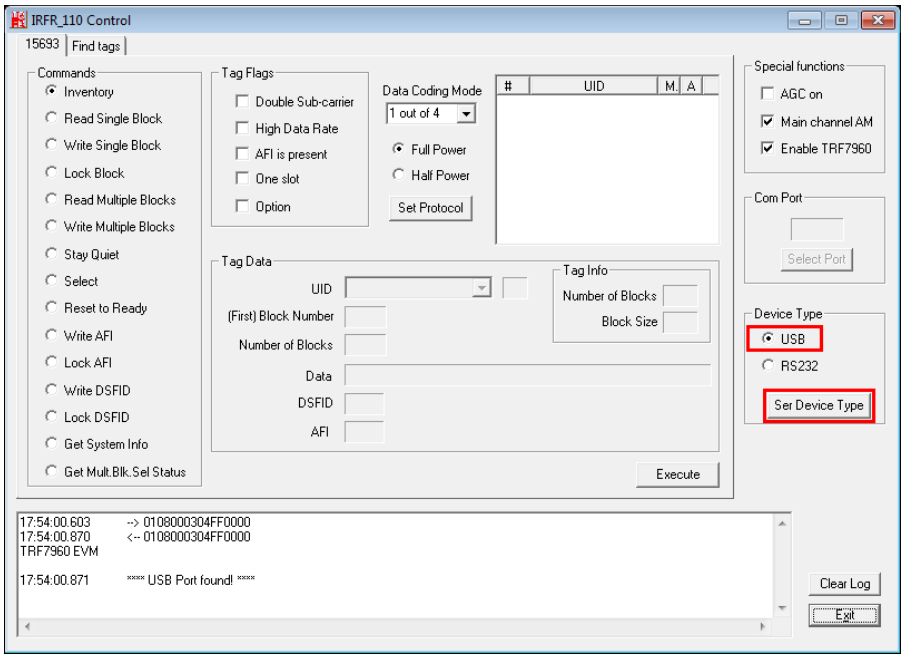


Figure 3-27: IRFR – Device Type

Step 5: The "**Ser Device Type**" button is disabled (grayed out) to indicate that the RFID reader is connected (**Figure 3-28**).

Figure 3-28: Ser Device Type Button Grayed Out

Step 6: Select the **Find tags** tab and click the **Run** button to enable the RFID reader (**Figure 3-29**).

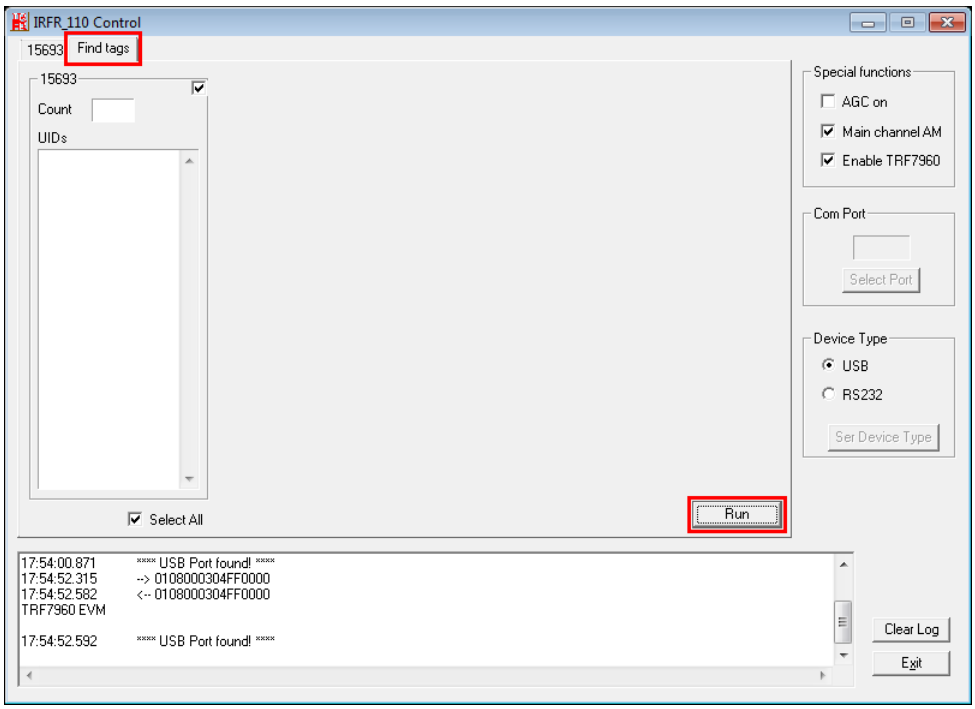


Figure 3-29: IRFR – Find Tags

Step 7: Use the RFID reader to read a RFID card, then the card number will be shown in the UIDs column (**Figure 3-30**).

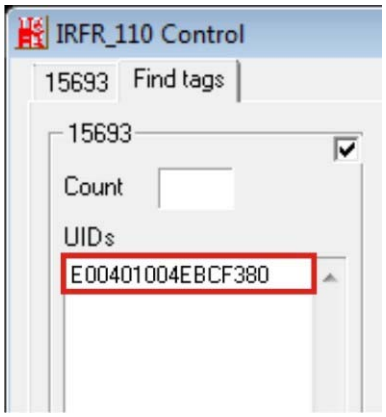


Figure 3-30: IRFR – UIDs

3.9 Using Barcode Scanner

There is a barcode scanner on the side panel (**Figure 1-5**). To use the barcode scanner, follow the steps below.

Step 1: Push the barcode scanner button on the top panel to turn on the barcode scanner. The LED of the barcode scanner on the side panel lights on.

Figure 3-31: Barcode scanner On/Off Button

Step 2: Launch **EasySet** from the system **Start** menu. The EasySet window appears (**Figure 3-32**).

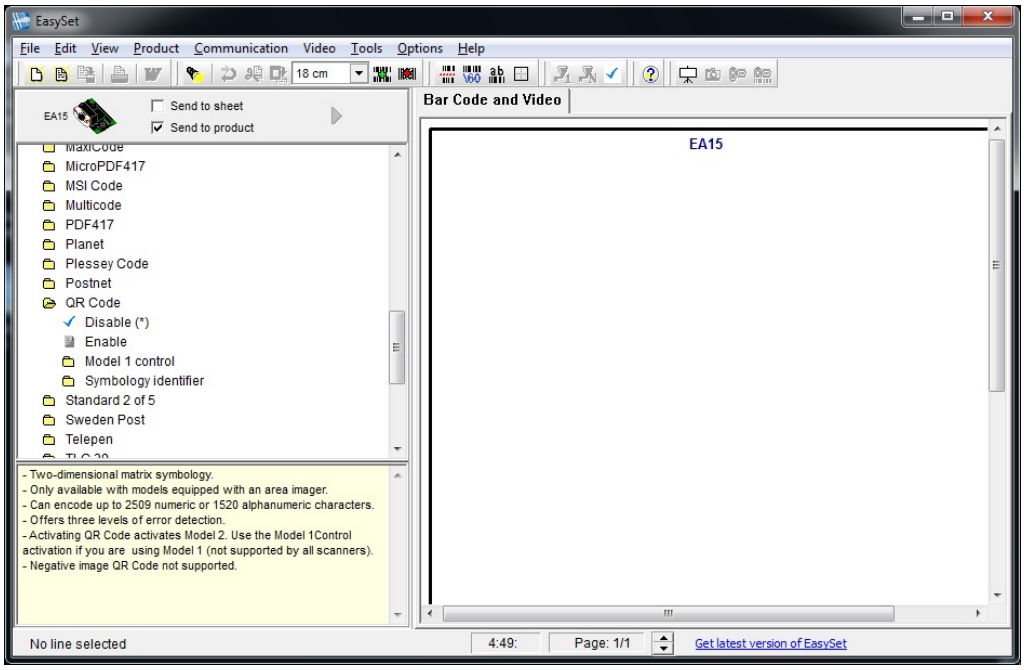


Figure 3-32: EasySet Window

Step 3: Click **Communication** on the tool bar and select **Connect** from the drop-down menu (**Figure 3-33**).

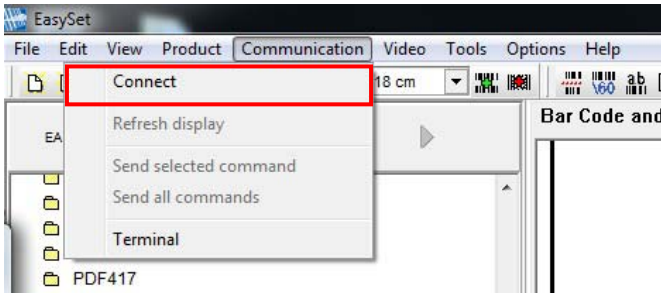


Figure 3-33: EasySet – Communication

Step 4: The Connection parameters window appears. Select **COM2** (default) and click **Apply** (**Figure 3-34**).

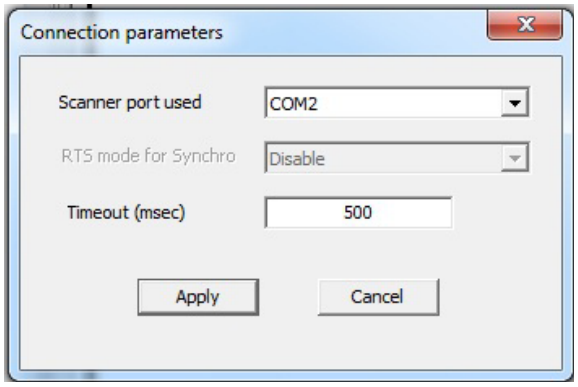


Figure 3-34: Connection Parameters Window

Step 5: To check if the barcode scanner is connected to the EasySet, click **Communication** again and see if the original option (Connect) has been changed to **Disconnect**.

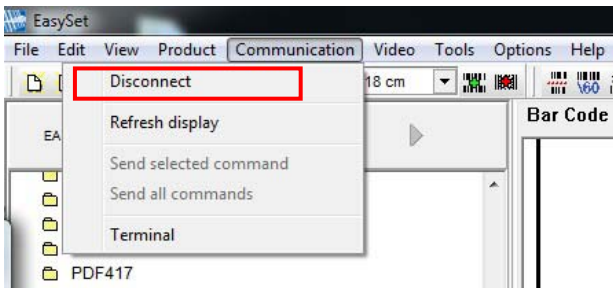


Figure 3-35: Communication – Disconnect

Step 6: To read the barcode information scanned by the reader, select **Terminal** from the **Communication** drop-down menu. The barcodes will be displayed on the right side (**Figure 3-36**).

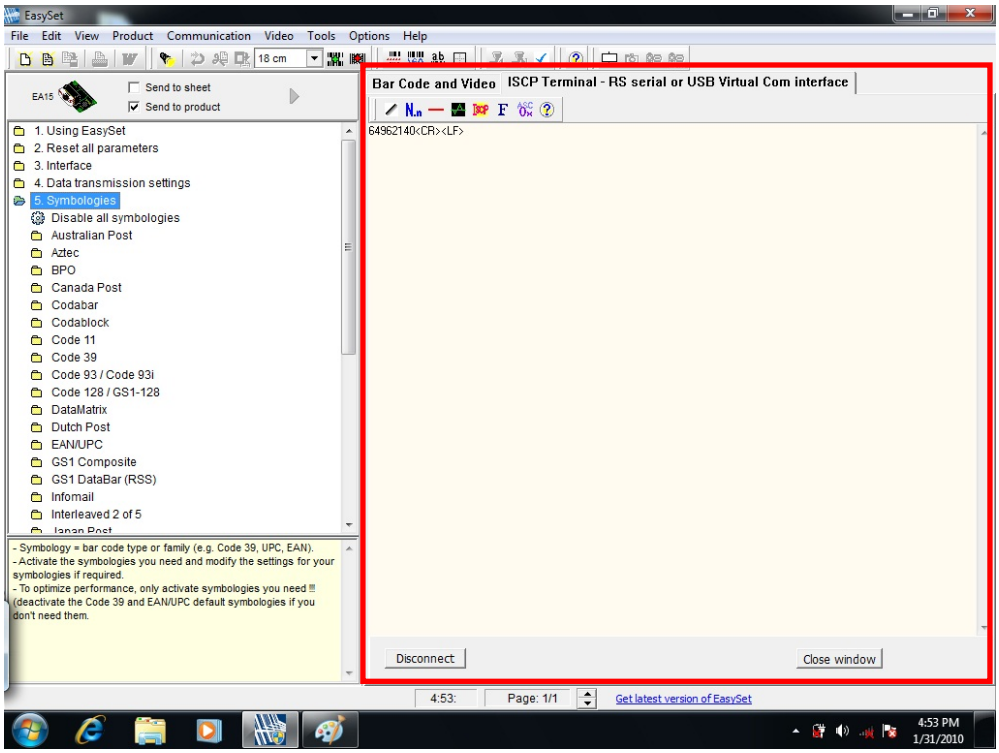


Figure 3-36: Barcode Information Display Area

3.9.1 Barcode Setting

All of the barcode parameters can be modified through EasySet. To be able to modify the parameters, please make sure to connect the EasySet with the barcode scanner (refer to **Section 3.9**). Follow the steps below to modify the parameters.

Step 1: The left side of the EasySet window (**Figure 3-37**) displays all parameters that can be configured.

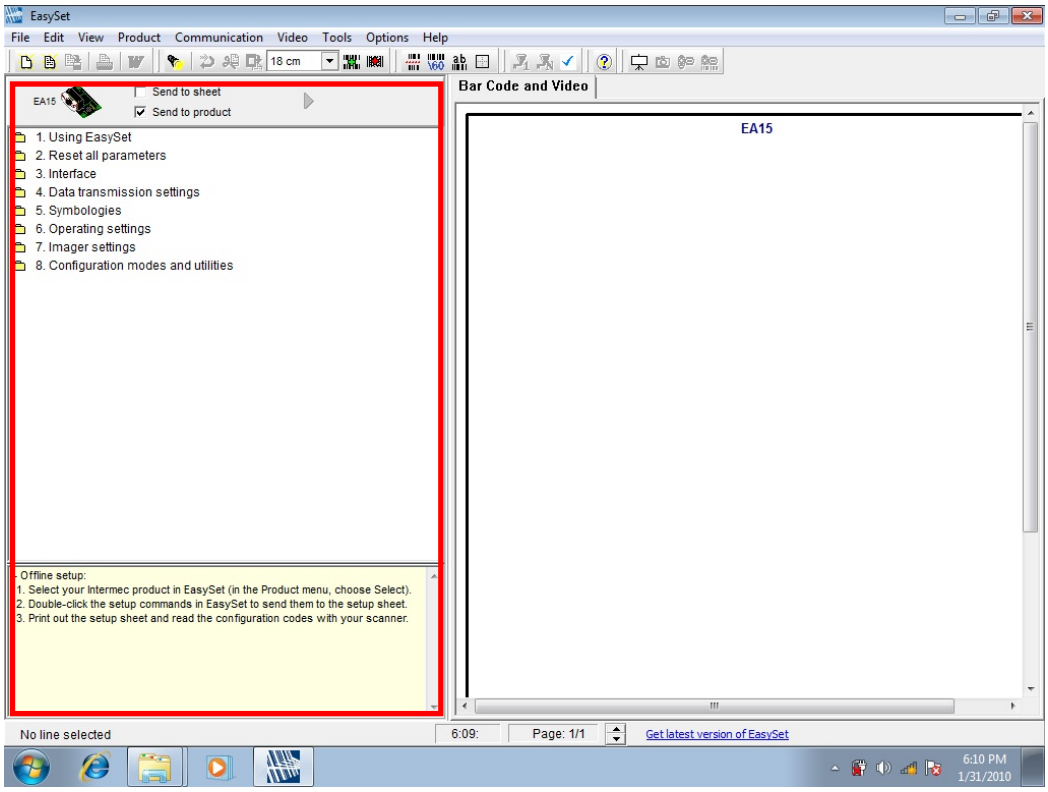

EasySet
File Edit View Product Communication Video Tools Options Help
Send to sheet
Send to product
1. Using EasySet
2. Reset all parameters
3. Interface
4. Data transmission settings
5. Symbologies
6. Operating settings
7. Imager settings
8. Configuration modes and utilities
Offline setup:
1. Select your Intermec product in EasySet (in the Product menu, choose Select).
2. Double-click the setup commands in EasySet to send them to the setup sheet.
3. Print out the setup sheet and read the configuration codes with your scanner.
Bar Code and Video
EA15
No line selected
6:09:
Page: 1/1
Get latest version of EasySet
6:10 PM
1/31/2010

Figure 3-37: Barcode Parameters

Step 2: Use the **Symbologies** section to setup the format that can be read by the barcode scanner (EA15). In the default setting, only the PDF417 format of 2-D barcodes is enabled. If other formats are needed, the user must enable them here. Take Aztec as an example. The Aztec is disabled (the Disable option is checked). Double click the **Enable** option to enable Aztec format. See **Figure 3-38**.

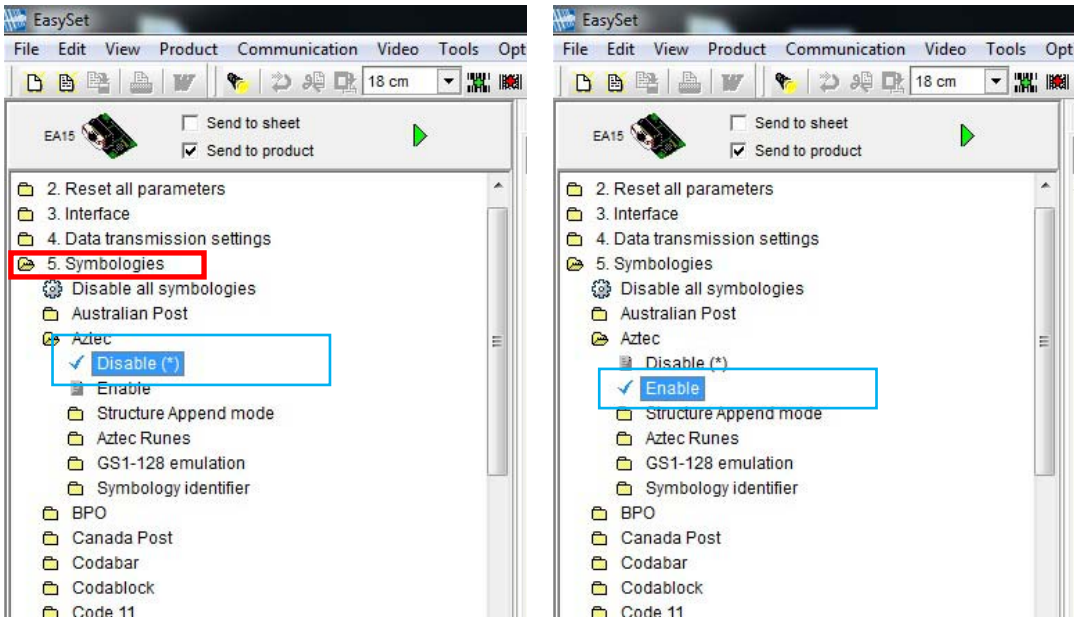


Figure 3-38: Symbologies

Step 3: Use the **Operating settings** section to configure barcode triggering modes, decoding security and beeps, etc.

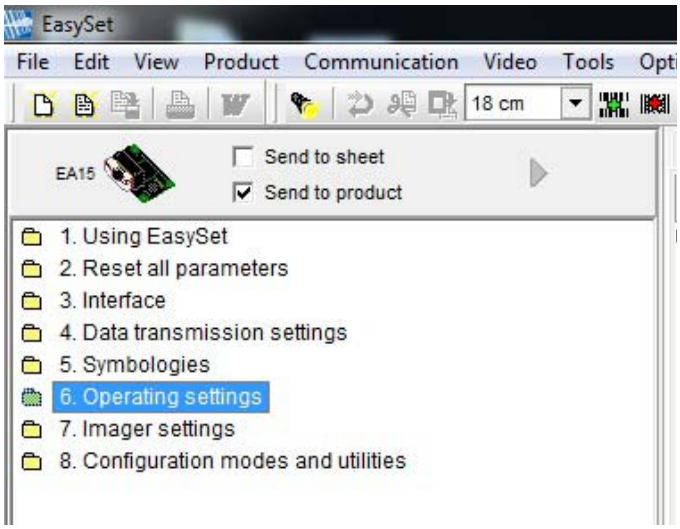


Figure 3-39: Operating Settings

Step 4: In the Scanning/Triggering section of operating settings, the user can set the triggering mode, continuous, level, etc.

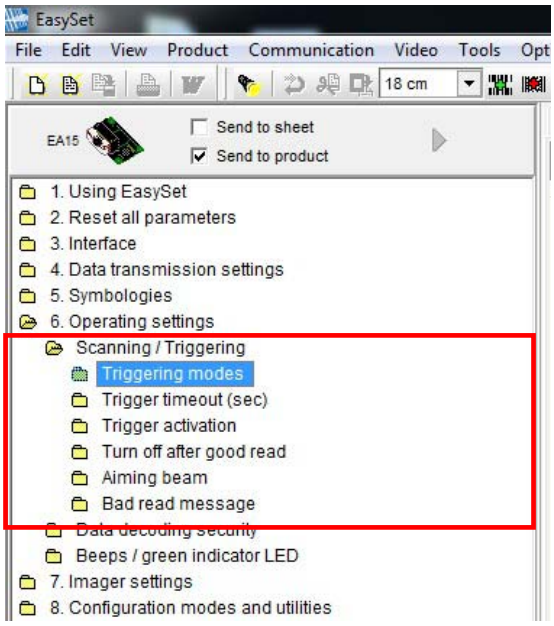


Figure 3-40: Scanning/Triggering

Step 5: In the Beeps/green indicator LED section of operating settings, the user can configure the beep sound of the barcode scanner.

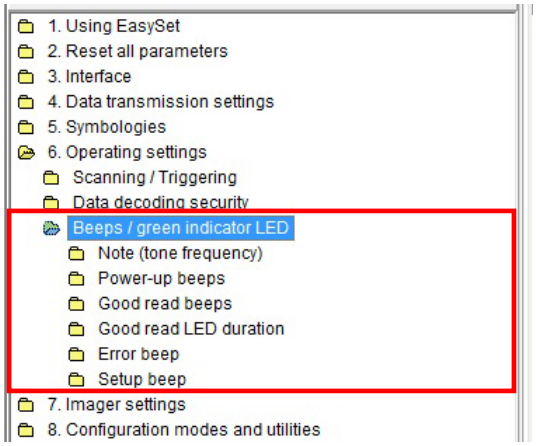
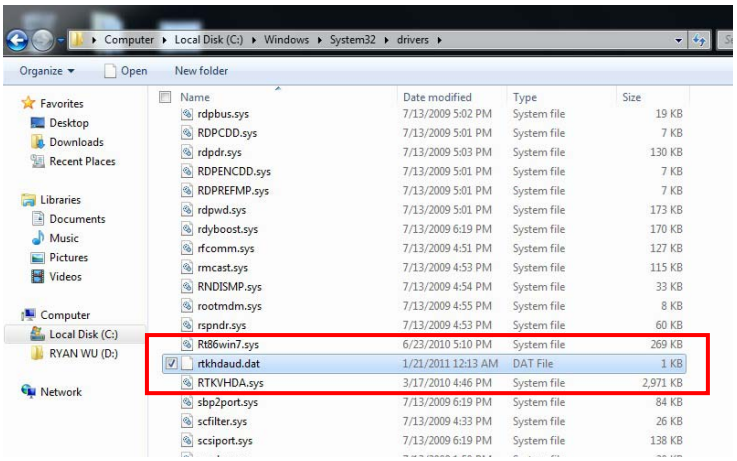


Figure 3-41: Beeps/Green Indicator LED

NOTE:

If no beep sound, please check if the “rtkhdaud.dat” file is in C:\windows\system32\drivers


Computer ▸ Local Disk (C:) ▸ Windows ▸ System32 ▸ drivers ▸
Organize
Open
New folder
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
RYAN WU (D:)
Network
Name
Date modified
Type
Size
rdpbus.sys 7/13/2009 5:02 PM System file 19 KB
RDPCDD.sys 7/13/2009 5:01 PM System file 7 KB
rdpdr.sys 7/13/2009 5:03 PM System file 130 KB
RDPENCDD.sys 7/13/2009 5:01 PM System file 7 KB
RDPREFMP.sys 7/13/2009 5:01 PM System file 7 KB
rdpwd.sys 7/13/2009 5:01 PM System file 173 KB
rdyboost.sys 7/13/2009 6:19 PM System file 170 KB
rfcomm.sys 7/13/2009 4:51 PM System file 127 KB
rmcast.sys 7/13/2009 4:53 PM System file 115 KB
RNDISMP.sys 7/13/2009 4:54 PM System file 33 KB
rootmdm.sys 7/13/2009 4:55 PM System file 8 KB
rspndr.sys 7/13/2009 4:53 PM System file 60 KB
Rt86win7.sys 6/23/2010 5:10 PM System file 269 KB
rtkhdaud.dat 1/21/2011 12:13 AM DAT File 1 KB
RTKVHDA.sys 3/17/2010 4:46 PM System file 2,971 KB
sbp2port.sys 7/13/2009 6:19 PM System file 84 KB
scfilter.sys 7/13/2009 4:33 PM System file 26 KB
scsiport.sys 7/13/2009 6:19 PM System file 138 KB

Chapter

4

Driver Installation

4.1 Available Software Drivers

NOTE:

The contents of the driver folder (ICEFIRE-T10A Driver) may vary throughout the life cycle of the product and is subject to change without prior notice. Visit the IEI website or contact technical support for the latest updates.

The following drivers can be installed on the system:

- Graphics driver
- LAN driver
- HSUPA driver
- Audio driver
- Fingerprint reader driver
- Barcode scanner driver
- Bluetooth driver

All drivers are located in "**ICEFIRE-T10A Driver**" folder of the system. Installation instructions are given below.

4.2 Intel® Graphics Driver

To install the graphics driver, please follow the steps below.

Step 1: Select **Graphics** from the list in Figure 4-1.

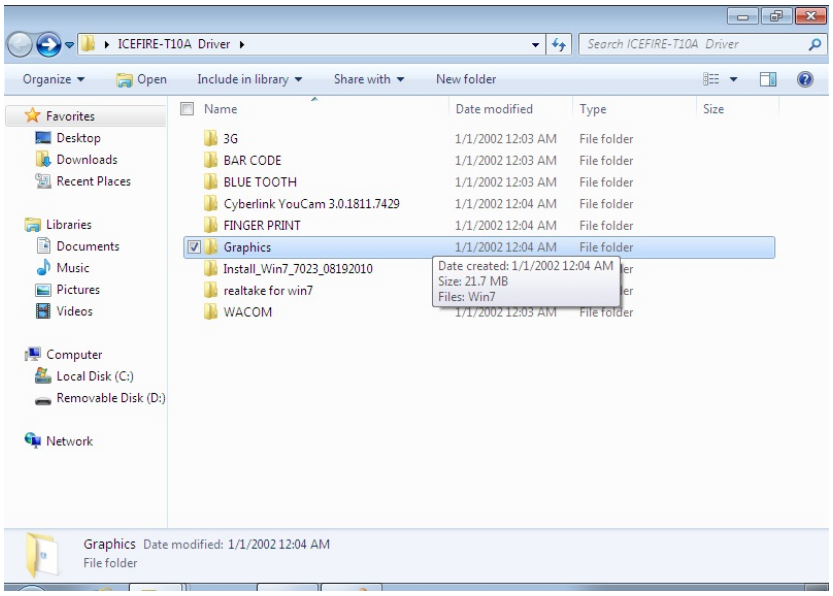


Figure 4-1: Graphics Driver Location

Step 2: Double click the setup file in the folder. The **Graphics Media Accelerator Driver** welcome screen appears (**Figure 4-2**).

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
intel
Welcome to the Setup Program
This setup program will install the Intel® Graphics Media Accelerator Driver onto this computer. It is strongly recommended that you exit all programs before continuing. Click Next to continue.
Automatically run WinSAT and enable the Windows Aero desktop theme (if supported).
< Back
Next >
Cancel
Intel® Installation Framework

Figure 4-2: Graphics Media Accelerator Driver

Step 3: Follow the step-by-step instruction of the installation wizard to install the graphics driver.

4.3 Realtek LAN Driver

To install the Realtek LAN driver, please follow the steps below.

Step 1: Select **Realtek_Lan** from the list in Figure 4-3.

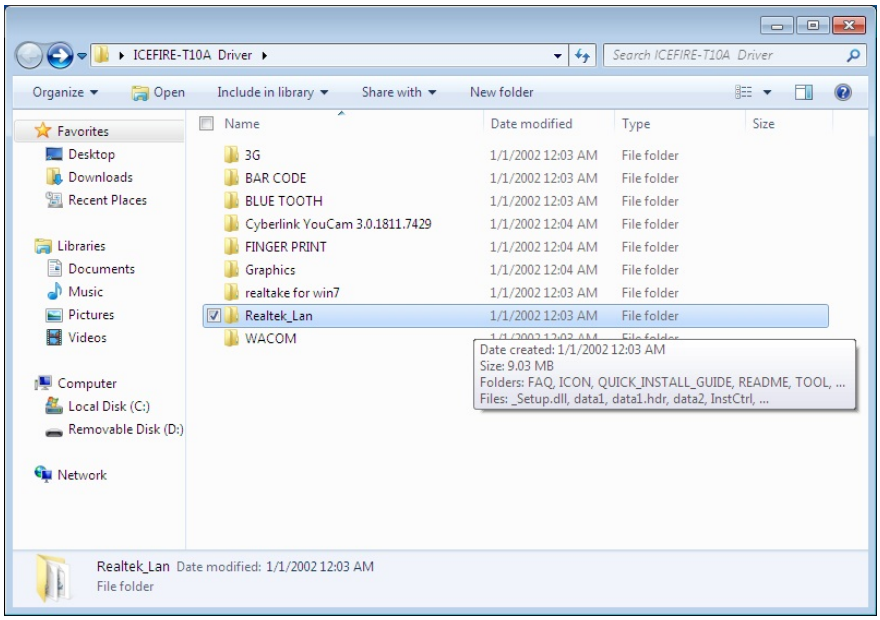


Figure 4-3: Realtek LAN Driver Location

Step 2: Double click the setup file in the folder. The InstallShield Wizard screen appears (Figure 4-4).

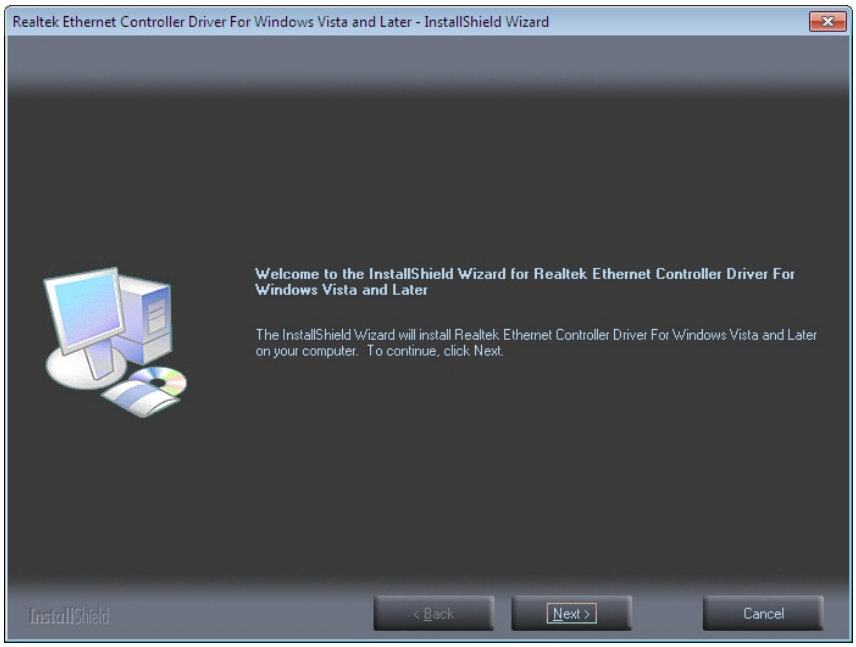

Realtek Ethernet Controller Driver For Windows Vista and Later - InstallShield Wizard
Welcome to the InstallShield Wizard for Realtek Ethernet Controller Driver For Windows Vista and Later
The InstallShield Wizard will install Realtek Ethernet Controller Driver For Windows Vista and Later on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

Figure 4-4: Realtek LAN InstallShield Wizard

Step 3: Follow the step-by-step instruction of the installation wizard to install the LAN driver.

4.4 Gobi™ 2000 WWAN Datacard Driver

There two drivers need to be installed for the Gobi™ 2000 module: module driver and connection manager. To install the Gobi™ 2000 drivers, please follow the steps below.

Step 1: Select 72-VR322-8_1.1.90 folder from the **3G** folder as shown in Figure 4-5.

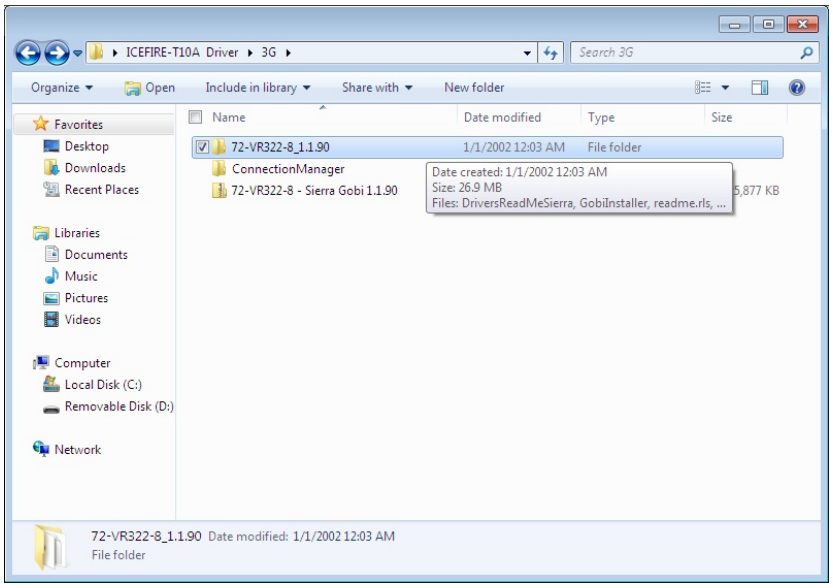


Figure 4-5: Gobi™ 2000 Module Driver Location

Step 2: Double click the setup file in the folder. Follow the step-by-step instruction of the installation wizard to install the module driver.

Step 3: Select **ConnectionManager** folder from the **3G** folder as shown in **Figure 4-6**.

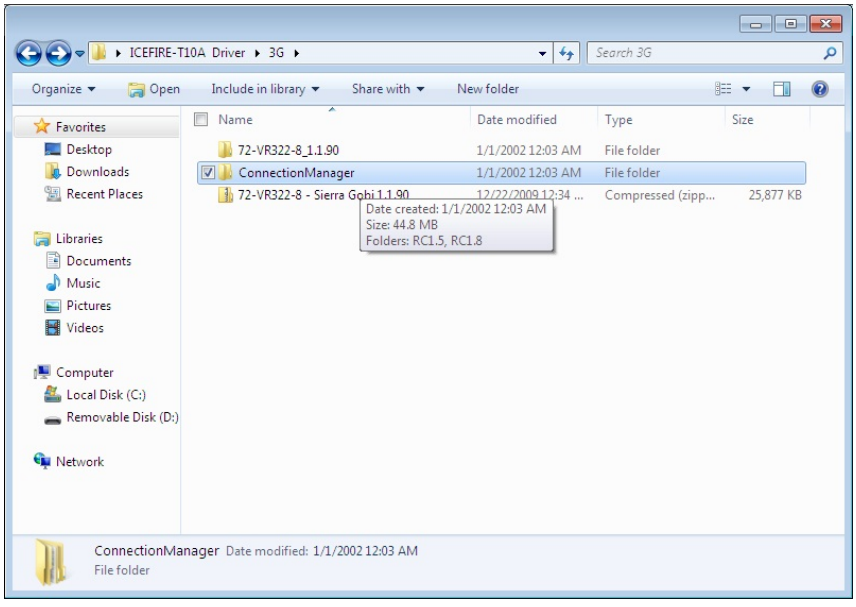


Figure 4-6: Gobi™ 2000 Connection Manager Driver Location

Step 4: Double click the setup file in the folder. Follow the step-by-step instruction of the installation wizard to install the Connection Manager driver.

4.5 Speaker and Microphone Driver

To install the driver for the speaker and the microphone, please follow the steps below.

Step 1: Select **realtake for win7** from the list in Figure 4-3.

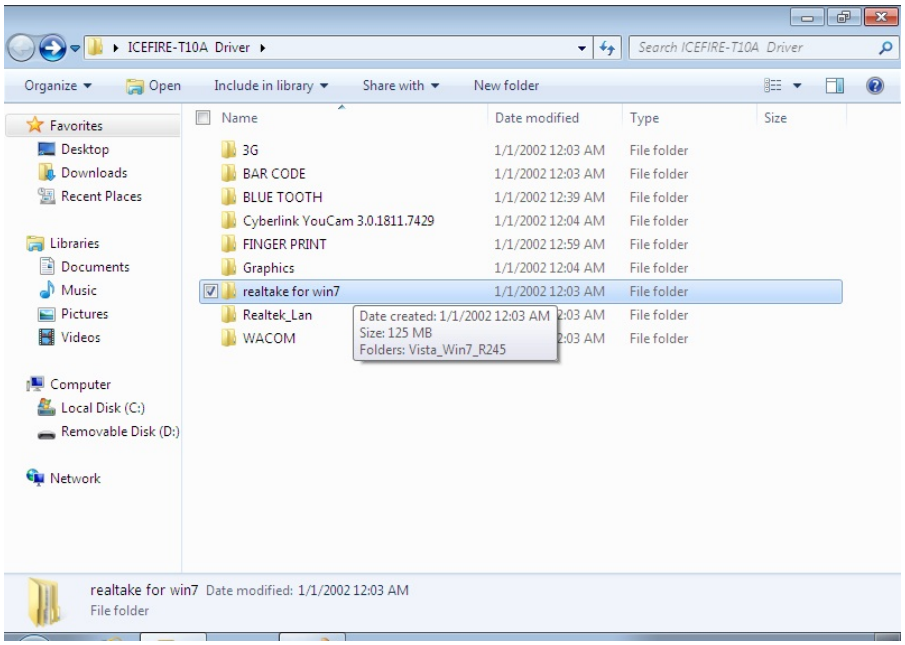


Figure 4-7: Speaker and Microphone Driver Location

Step 2: Double click the setup file in the folder. The **InstallShield Wizard** screen appears (**Figure 4-4**).

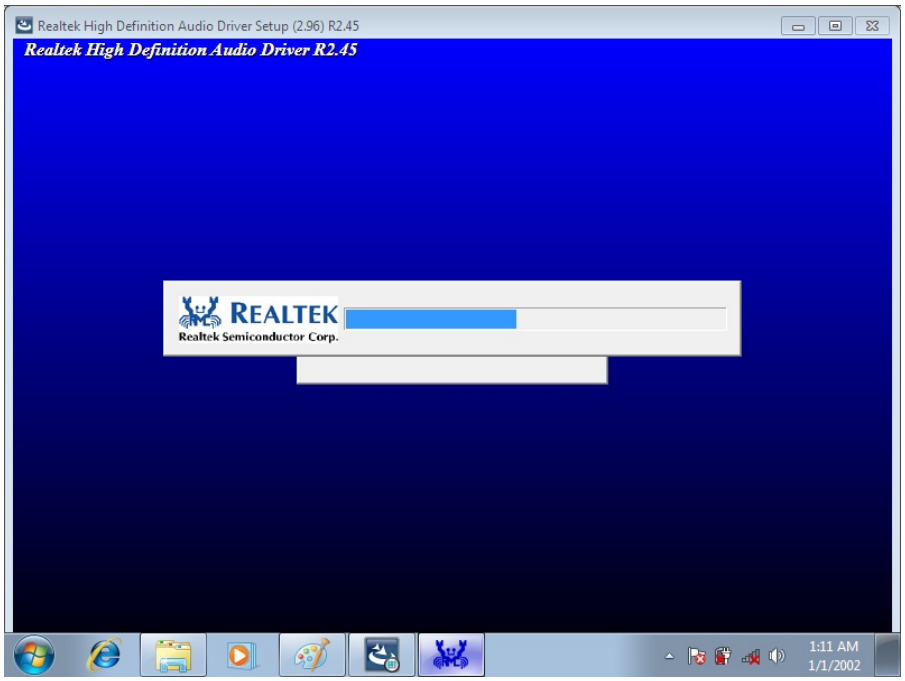


Figure 4-8: Realtek HD Audio Driver InstallShield Wizard

Step 3: Follow the step-by-step instruction of the installation wizard to install the HD Audio driver.

4.6 Fingerprint Reader Driver

To install the fingerprint reader driver, please follow the steps below.

Step 1: Select **FINGER PRINT** from the list in Figure 4-3.

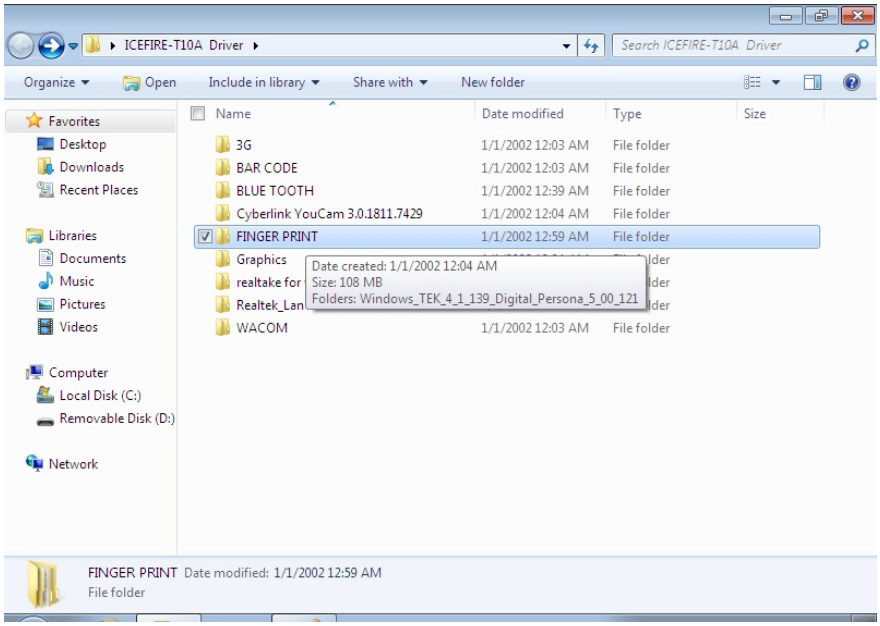


Figure 4-9: Fingerprint Reader Driver Location

Step 2: Double click the setup file in the folder. The InstallShield Wizard screen appears (**Figure 4-4**).

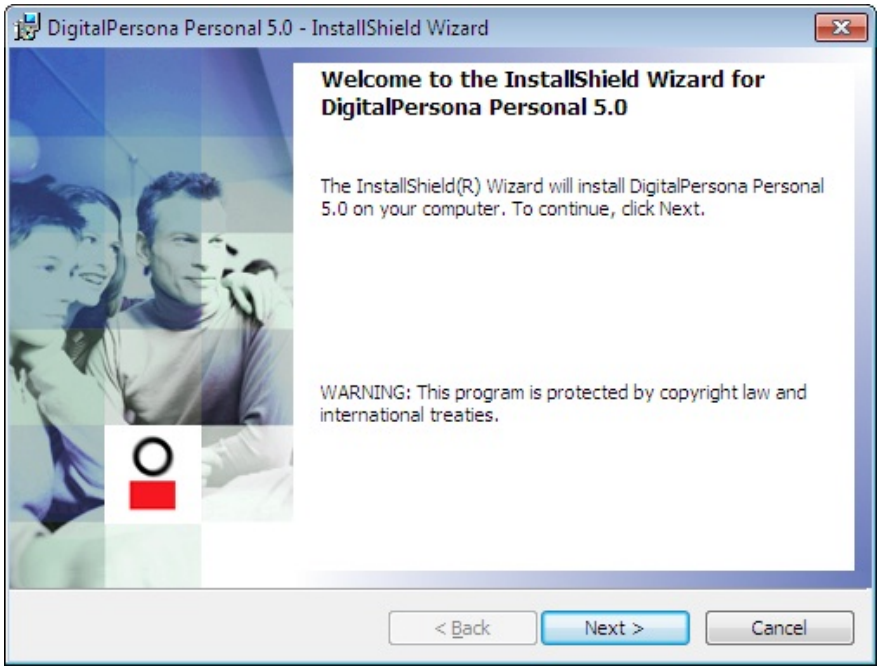

DigitalPersona Personal 5.0 - InstallShield Wizard
Welcome to the InstallShield Wizard for DigitalPersona Personal 5.0
The InstallShield(R) Wizard will install DigitalPersona Personal 5.0 on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
< Back
Next >
Cancel

Figure 4-10: Fingerprint Reader InstallShield Wizard

Step 3: Follow the step-by-step instruction of the installation wizard to install the fingerprint reader driver.

4.7 Barcode Scanner Driver

To install the barcode scanner driver, please follow the steps below.

Step 1: Select **BAR CODE** from the list in Figure 4-3.

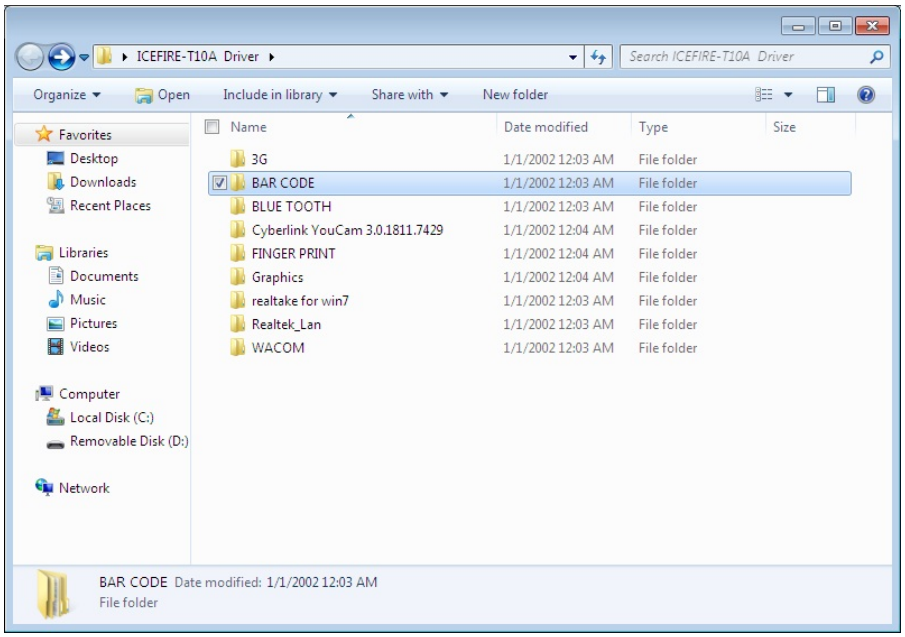


Figure 4-11: Barcode Scanner Driver Location

Step 2: Double click the setup file in the folder. The InstallShield Wizard screen appears. Follow the step-by-step instruction of the installation wizard to install the barcode scanner driver.

4.8 Bluetooth Driver

To install the Bluetooth driver, please follow the steps below.

Step 1: **Turn on the Bluetooth** by pushing the Bluetooth on/off button on the front panel.

Step 2: Select **BTW_6.2.0.9600_vista_w7_20090721** from the **BLUE TOOTH** folder as shown in Figure 4-3.

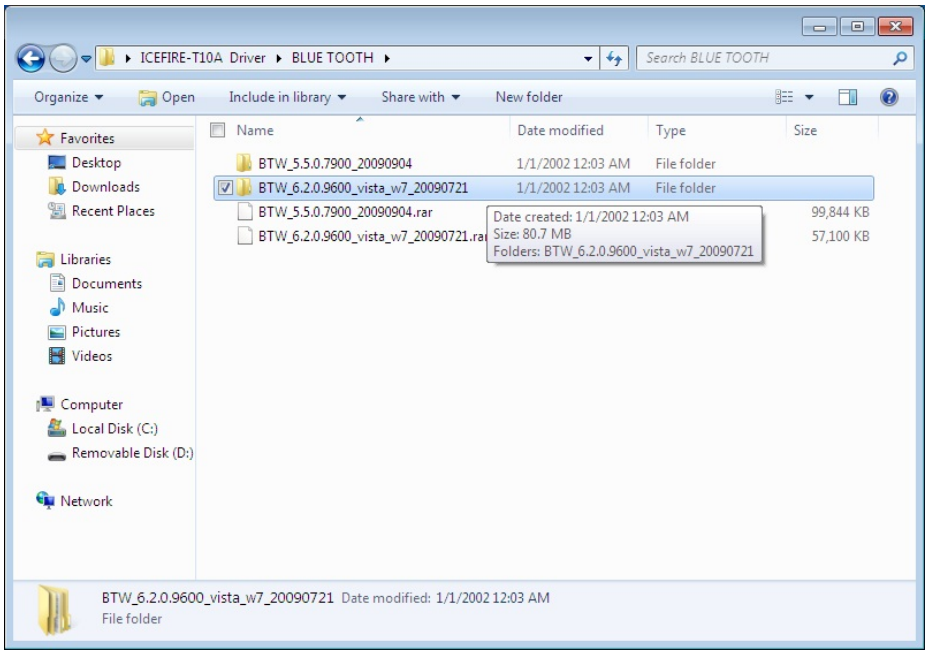


Figure 4-12: Bluetooth Driver Location

Step 3: Double click the setup file in the folder. The InstallShield Wizard screen appears. Follow the step-by-step instruction of the installation wizard to install the Bluetooth driver.

Chapter

5

ICEFIRE Control Center

5.1 Getting Started

The ICEFIRE control center puts many tasks and common settings in a single window. To launch Control Center, click the icon

on the desktop. The Control Center interface is shown below.

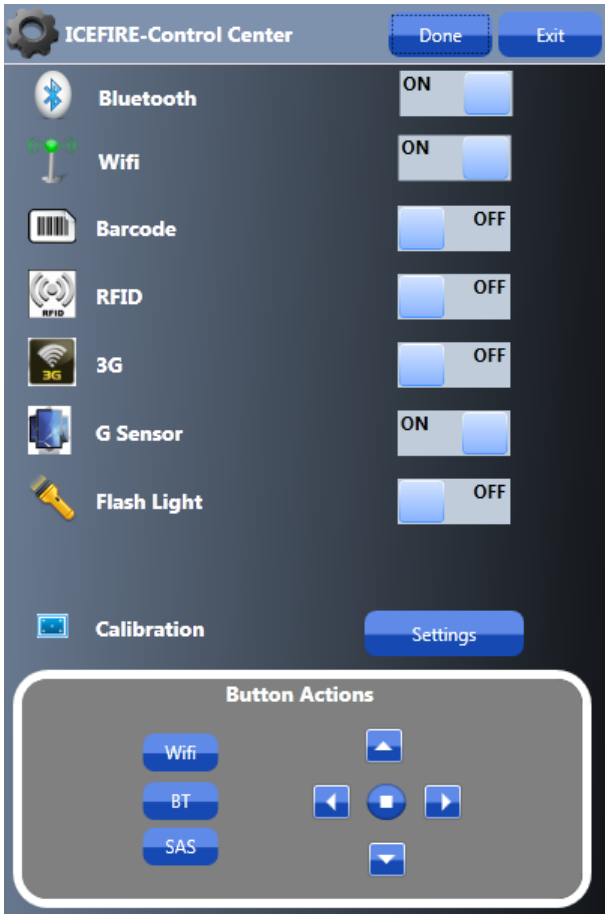


Figure 5-1: Control Center

5.2 Features

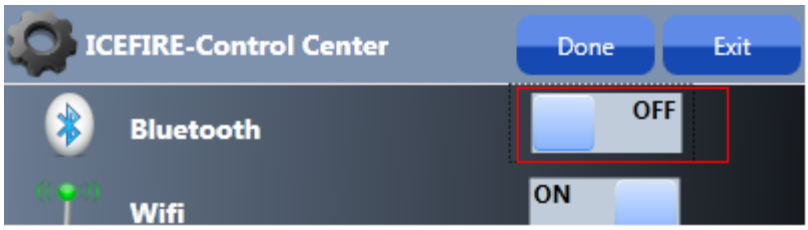
The Control Center has following features

- Module status
- Calibration
- Programmable button actions

5.3 Module Status

The user can use this feature to check status and turn on or turn off the hardware modules, such as Bluetooth or Wi-Fi. Take Bluetooth as an example, the following section describes how to turn on or turn off the Bluetooth.

The indicator shows Bluetooth is off. Click the indicator to switch on Bluetooth.



The indicator shows Bluetooth module is on. The Bluetooth-enabled device can be used with the ICEFIRE-T10A.

Repeat the same steps to turn on or turn off other modules listed in **Figure 5-2**.

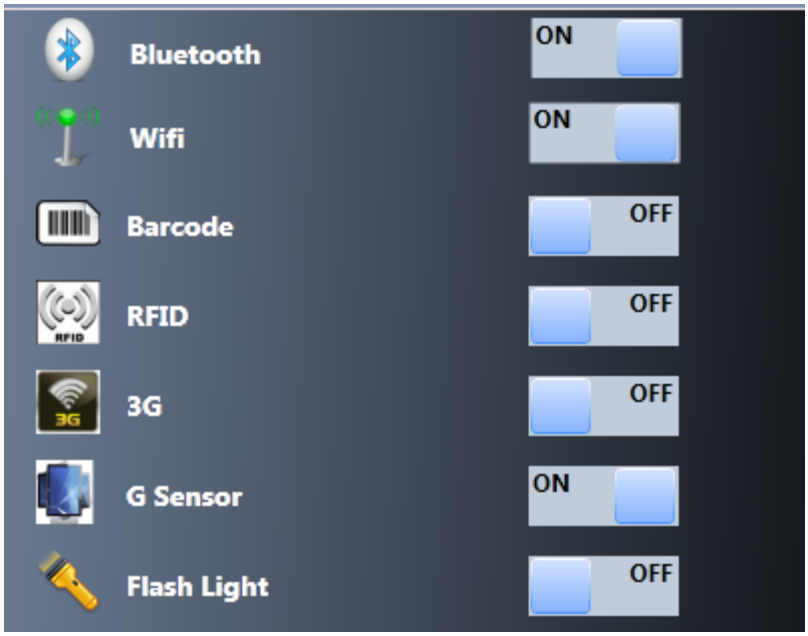


Figure 5-2: Module Status

5.4 Calibration

Using a digitizer or touch to interact with the ICEFIRE-T10A is more frequent than using a mouse and keyboard. The user should calibrate the digitizer and touch for the first time using the system and whenever the touch point does not align properly.

To calibrate digitizer and touch, please follow the steps below:

Step 1: Click the settings button on the control center.

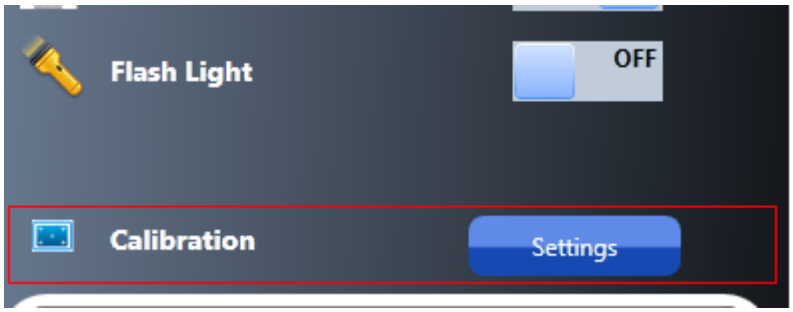


Figure 5-3: Calibration

Step 2: Tablet PC Settings window appears. Click the Calibrate button.

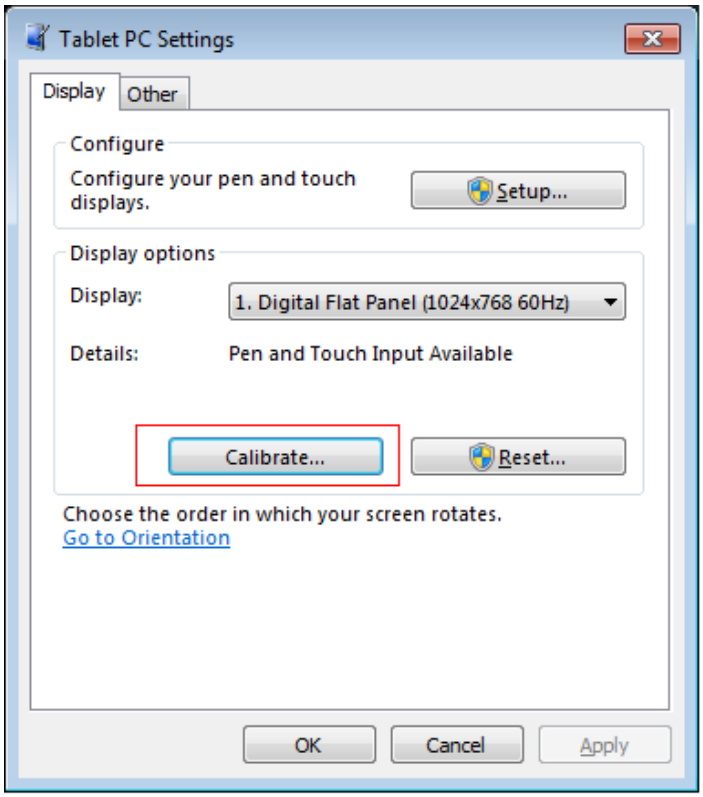


Figure 5-4: Tablet PC Settings

Step 3: Select the input type to calibrate.

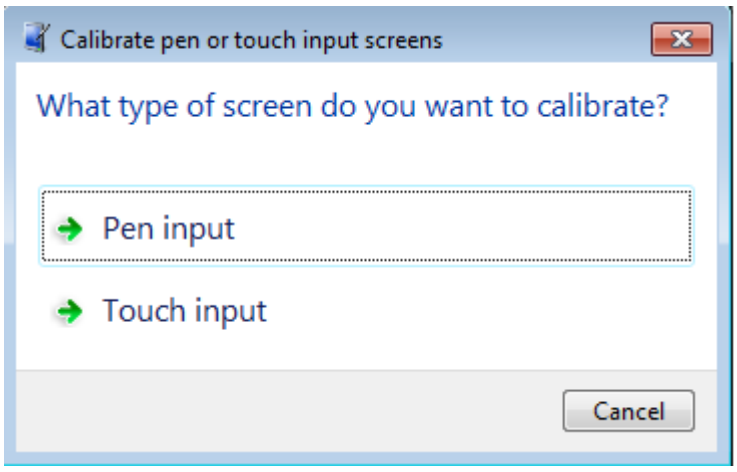


Figure 5-5: Calibrate Pen or Touch Input Screens

Step 4: Follow the instructions in the calibration program to calibrate.

5.5 Programmable Buttons

As become more familiar with the ICEFIRE-T10A, the user may want to customize the keys on the front panel. The user can configure the keys to launch the favorite program, run a command or enter a key combination.

NOTE:

The buttons and function keys on the front panel are disabled when the Control Center is launched by the user.

To configure the front panel buttons, follow the steps below:

Step 1: Launch the Control Center. In the Button Actions section, select the button you want to configure the action.

Figure 5-6: Button Actions

Step 2: Take Wifi as an example. Click the wifi button.The button configuration window appears (**Figure 5-7**). The button configuration window has two sections.

- Wifi
- Fn+Wifi (Function key and wifi key should be pressed together)

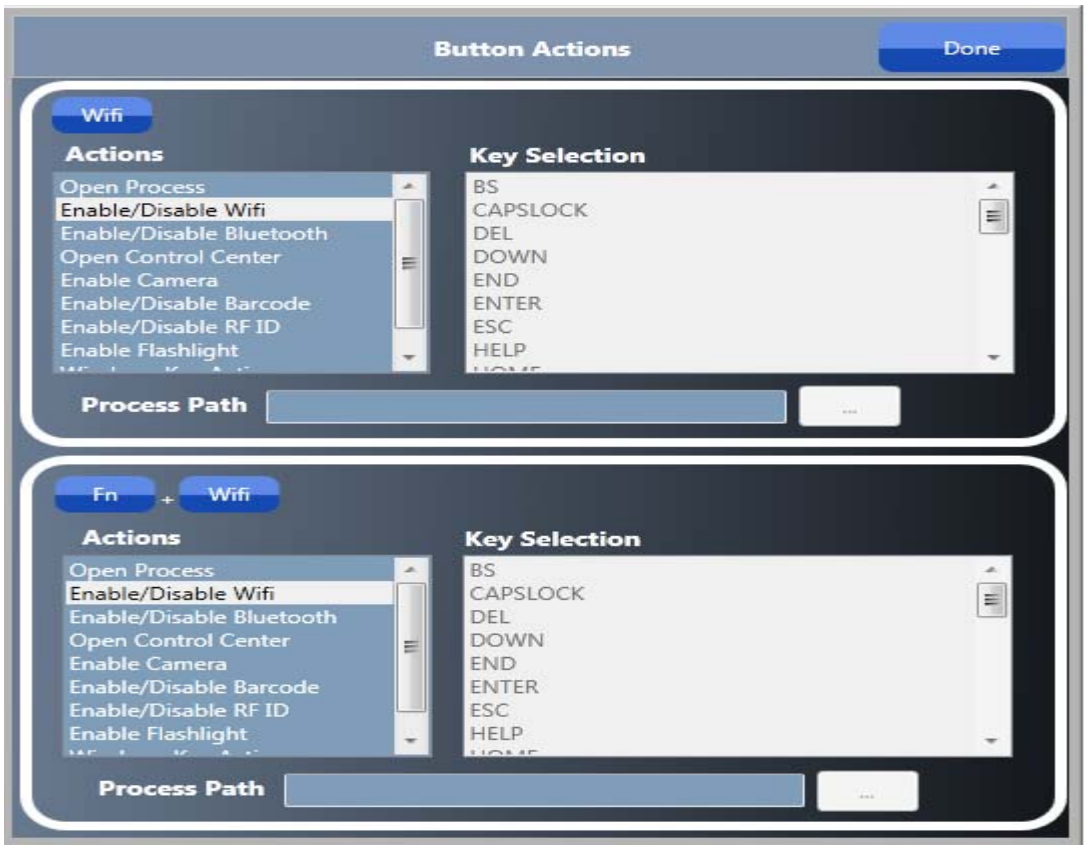


Figure 5-7: Button Actions - Wifi

Step 3: Both sections have a list of action to be performed. Select one action from the list.

Step 4: Once settings are completed click the “Done” button to save the settings.

Other actions are described in the table below:

Action	Description
Open Process	Execute process specified by user (see **Section 5.5.1**)
Enable/Disable Wi-Fi	Turn on/off Wi-Fi
Enable/Disable Bluetooth	Turn on/off Bluetooth
Open Control Center	Open control center to change settings
Enable Camera	Open camera application

Enable/Disable Barcode	Execute barcode reading
Enable/Disable RFID	Execute RFID reading
Enable Flashlight	Execute flashlight
Windows Key Action	Execute windows key actions (see **Section 5.5.2**)

Table 5-1: Action Description

5.5.1 Action: Open Process

If Open Process action is selected, a path of the executable file has to be specified. Refer to the following diagram.

Figure 5-8: Action - Open Process

5.5.2 Action: Windows Key Action

If Windows Key Action is selected, the user has to select any one of windows key from "Key Selection" list (**Figure 5-9**).

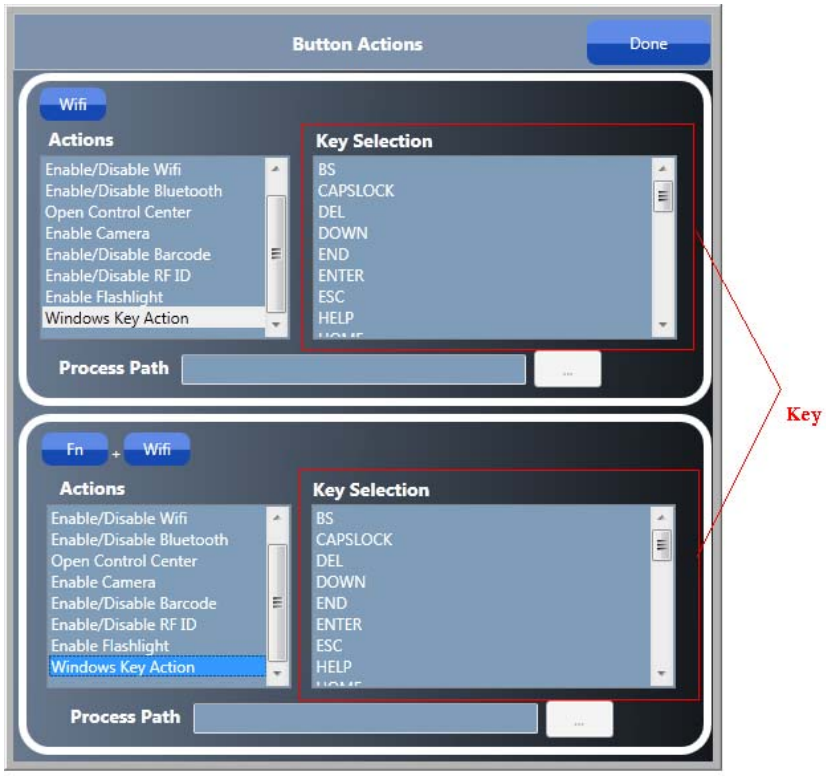
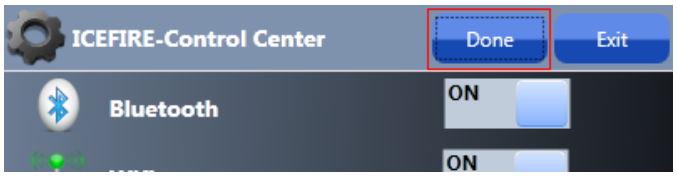


Figure 5-9: Action - Windows Key Action

NOTE:

After changing the settings, please click the Done button to perform all actions specified by user. Default actions will be performed if click Exit button to exit the control center.



Chapter

6

BIOS Setup

6.1 Introduction

The BIOS is programmed onto the BIOS chip. The BIOS setup program allows changes to certain system settings. This chapter outlines the options that can be changed.

6.1.1 Starting Setup

The UEFI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. Press the DELETE key as soon as the system is turned on or
2. Press the DELETE key when the "**Press DELETE to enter SETUP**" message appears on the screen.

If the message disappears before the **DELETE** key is pressed, restart the computer and try again.

6.1.2 Using Setup

Use the arrow keys to highlight items, press **ENTER** to select, use the PageUp and PageDown keys to change entries, press **F1** for help and press **ESC** to quit. Navigation keys are shown in.

Key	Function
Up arrow	Move to the item above
Down arrow	Move to the item below
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
+	Increase the numeric value or make changes
-	Decrease the numeric value or make changes
Page up	Move to the next page
Page down	Move to the previous page

Key	Function
Esc	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F9	Load optimized defaults
F10	Save changes and Exit BIOS

Table 6-1: BIOS Navigation Keys

6.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

6.1.4 BIOS Menu Bar

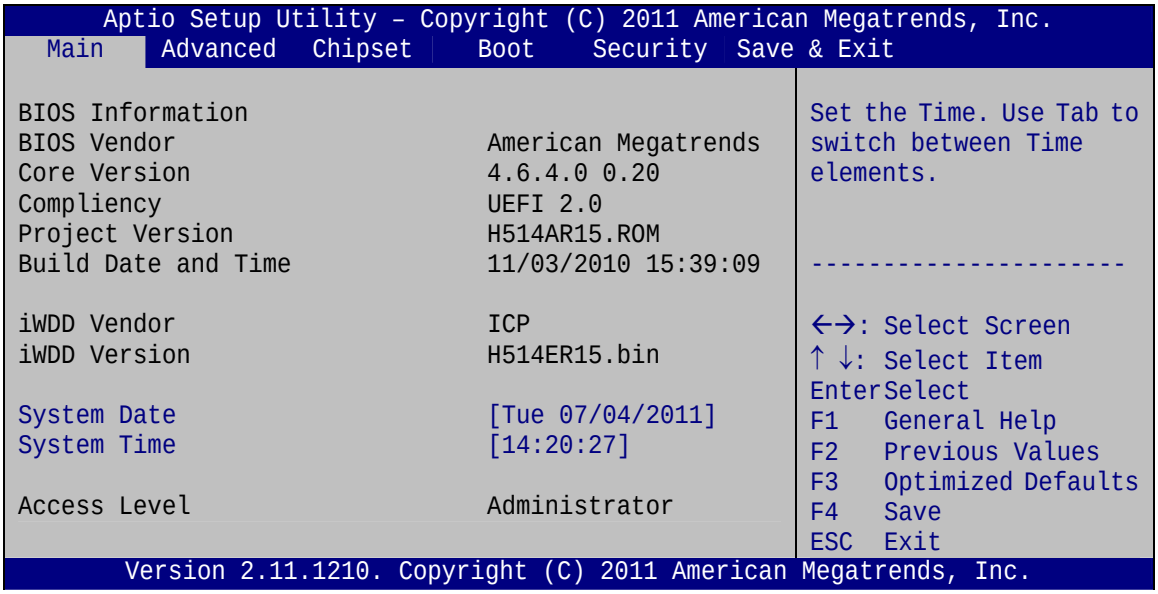
The **menu bar** on top of the BIOS screen has the following main items:

- Main – Changes the basic system configuration.
- Advanced – Changes the advanced system settings.
- Chipset – Changes the chipset settings.
- Boot – Changes the system boot configuration.
- Security – Sets User and Supervisor Passwords.
- Save & Exit – Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

6.2 Main

The **Main** BIOS menu (**BIOS Menu 1**) appears when the **BIOS Setup** program is entered. The **Main** menu gives an overview of the basic system information.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.4.0 0.20
Compliency UEFI 2.0
Project Version H514AR15.ROM
Build Date and Time 11/03/2010 15:39:09
iWDD Vendor ICP
iWDD Version H514ER15.bin
System Date [Tue 07/04/2011]
System Time [14:20:27]
Access Level Administrator
Set the Time. Use Tab to switch between Time elements.
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1 General Help
F2 Previous Values
F3 Optimized Defaults
F4 Save
ESC Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

BIOS Menu 1: Main

➔ **BIOS Information**

The **BIOS Information** lists a brief summary of the BIOS. The fields in **BIOS Information** cannot be changed. The items shown in the system overview include:

- **BIOS Vendor:** Installed BIOS vendor
- **Core Version:** Current BIOS version
- **Project Version:** the board version
- **Build Date:** Date the current BIOS version was made

The System Overview field also has two user configurable fields:

➔ **System Date [xx/xx/xx]**

Use the **System Date** option to set the system date. Manually enter the day, month and year.

➔ **System Time [xx:xx:xx]**

Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

6.3 Advanced

Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:

WARNING!

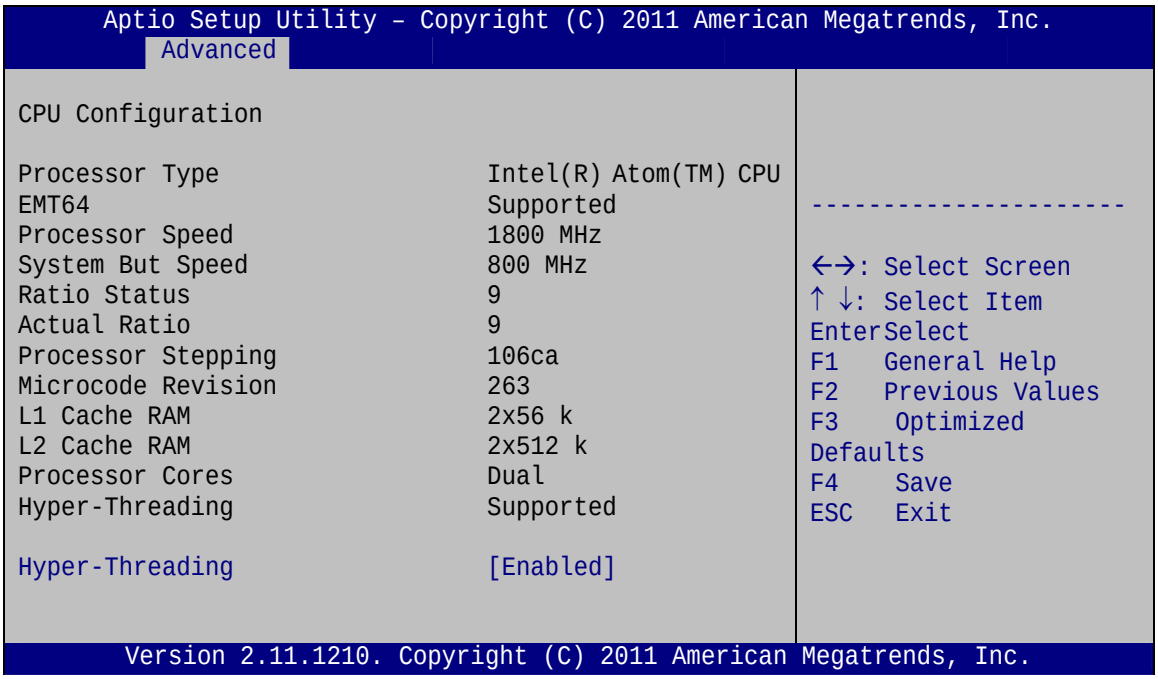
Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

```
      Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
  Main   Advanced   Chipset   Boot   Security   Save & Exit

> CPU Configuration                          System ACPI Parameters
> IDE Configuration
> USB Configuration
> H/M Monitor
> iEi Feature                                ----------------------

                                             ←→: Select Screen
                                             ↑ ↓: Select Item
                                             EnterSelect
                                             F1   General Help
                                             F2   Previous Values
                                             F3    Optimized
                                             Defaults
                                             F4    Save
                                             ESC   Exit
      Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Menu 2: Advanced

6.3.1 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 3**) to view detailed CPU specifications and configure the CPU.



BIOS Menu 3: CPU Configuration

The CPU Configuration menu (**BIOS Menu 3**) lists the following CPU details:

- Processor Type: Lists the brand name of the CPU being used
- EMT64: Indicates if the EM64T is supported by the CPU.
- Processor Speed: Lists the CPU processing speed
- System Bus Speed: Lists the system bus speed
- Processor Stepping: Lists the CPU processing stepping
- Microcode Revision: Lists the microcode revision
- L1 Cache RAM: Lists the CPU L1 cache size
- L2 Cache RAM: Lists the CPU L2 cache size
- Processor Cores: Lists the number of the processor core
- Hyper-Threading: Indicates if the Intel® HT Technology is supported by the CPU.

➔ **Hyper Threading [Disabled]**

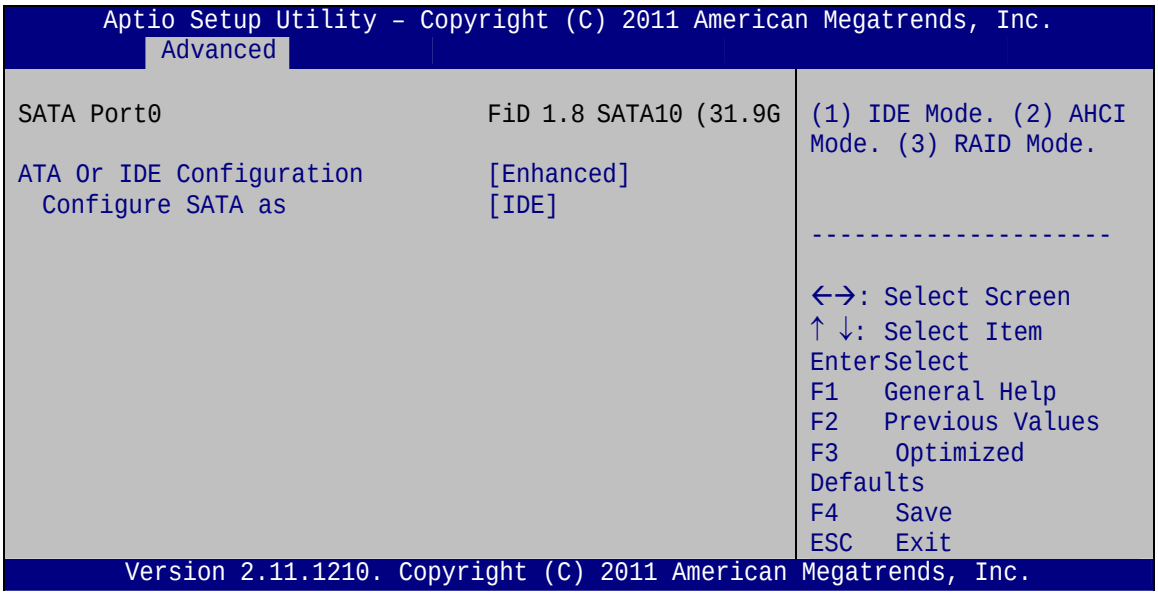
Use the **Hyper Threading** to enable or disable the CPU hyper threading function.

➔ **Disabled** **DEFAULT** Disables the use of hyper threading technology

➔ **Enabled** Enables the use of hyper threading technology

6.3.2 SATA Configuration

Use the **SATA Configuration** menu (**BIOS Menu 4**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 4: IDE Configuration

➔ **ATA Or IDE Configurations [Ehanced]**

Use the **ATA Or IDE Configurations** option to configure the ATA/IDE controller.

➔ **Disabled** Disables the on-board ATA/IDE controller.

➔ **Enhanced** **DEFAULT** Configures the on-board ATA/IDE controller to be in Enhanced mode. In this mode, IDE channels and SATA channels are separated. This mode supports up to 6 storage devices. Some legacy OS do not support this mode.

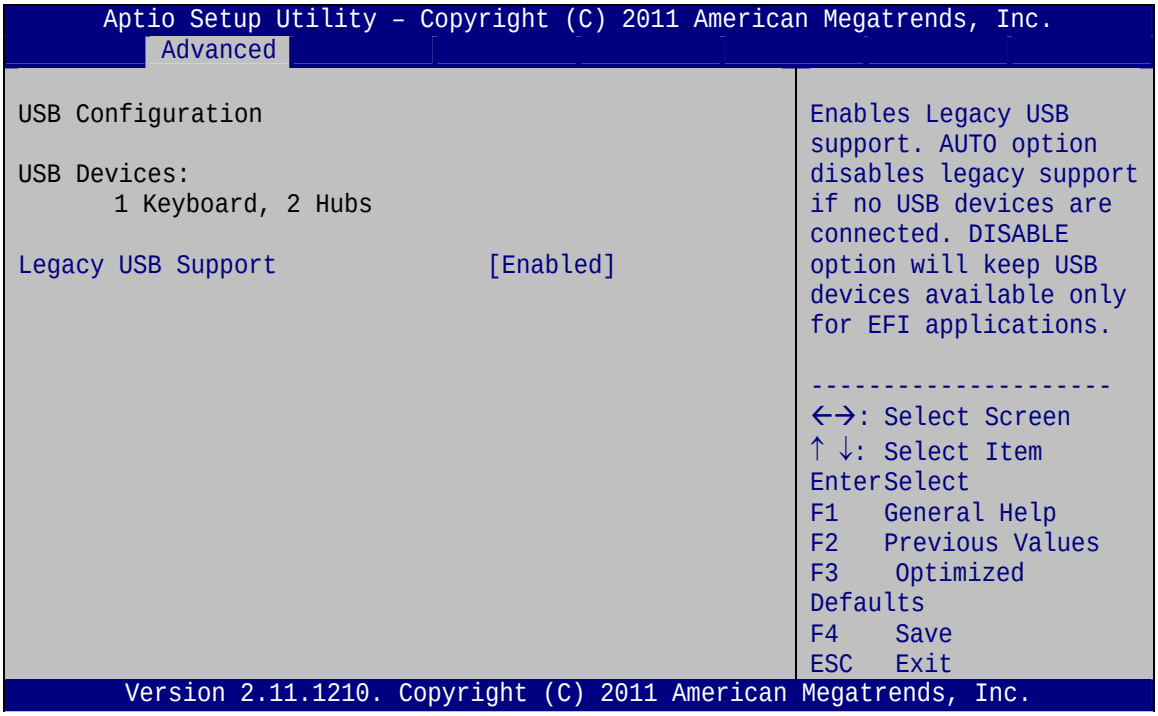
➔ **Configure SATA as [IDE]**

Use the **Configure SATA as** option to configure SATA devices as normal IDE devices.

➔ **IDE**	**DEFAULT**	Configures SATA devices as normal IDE device.
➔ **AHCI**		Configures SATA devices as AHCI device.

6.3.3 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 5**) to read USB configuration information and configure the USB settings.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
USB Configuration
USB Devices:
1 Keyboard, 2 Hubs
Legacy USB Support [Enabled]
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1 General Help
F2 Previous Values
F3 Optimized Defaults
F4 Save
ESC Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

BIOS Menu 5: USB Configuration

➔ **USB Devices**

The **USB Devices Enabled** field lists the USB devices that are enabled on the system

➔ **Legacy USB Support [Enabled]**

Use the **Legacy USB Support** BIOS option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard

does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.

➔	**Enabled**	**DEFAULT**	Legacy USB support enabled
➔	**Disabled**		Legacy USB support disabled
➔	**Auto**		Legacy USB support disabled if no USB devices are connected

6.3.4 H/W Monitor

The H/W Monitor menu (**BIOS Menu 6**) shows the operating temperature, fan speeds and system voltages.

```
Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
        Advanced

CPU Temperature                 :+66 C
Accuracy: 1. -5 ~ +10 degree around 100 degree.
          2. -10 ~ +15 degree around 50 degree.

SYS Temperature                 :+55 C

System FAN1 Speed               :5644 RPM

> System FAN1 Configuration

                                    ---------------------
                                    ←→: Select Screen
                                    ↑ ↓: Select Item
                                    Enter Select
                                    F1   General Help
                                    F2   Previous Values
                                    F3    Optimized
                                    Defaults
                                    F4    Save
                                    ESC   Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Menu 6: Hardware Health Configuration

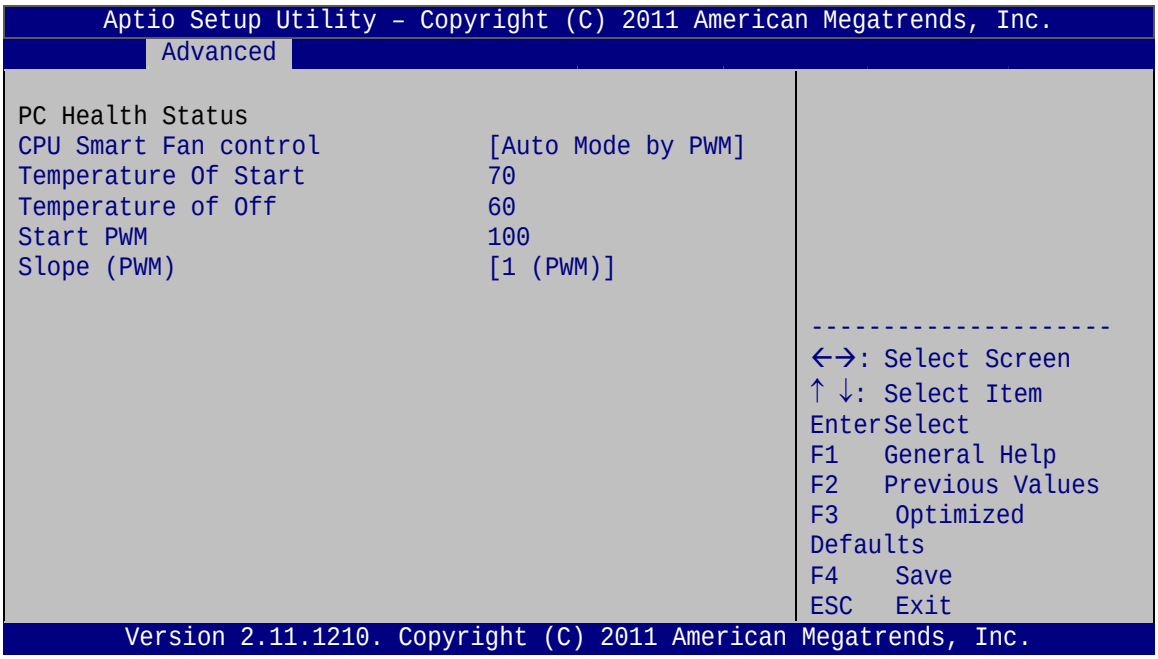
➔ **PC Health Status**

The following system parameters and values are shown. The system parameters that are monitored are:

- CPU Temperature
- System Temperature
- System Fan Speed

6.3.4.1 System FAN1 Configuration

The System FAN1 Configuration menu (**BIOS Menu 7**) configures the system fan (FAN1).



BIOS Menu 7: Hardware Health Configuration

➔ **Mode Setting [Full On Mode]**

Use the **Mode Setting** option to configure the second fan.

➔ **Full Mode**	**DEFAULT**	Fan is on all the time
➔ **Manual Mode by PWM**		The fan spins at the speed set in: Manual Setting
➔ **Auto Mode by PWM**		The fan adjusts its speed using these settings: Temperature of Start Temperature of Off Start PWM Slope (PWM)

➔ **Temperature of Start [070]**

WARNING:

CPU failure can result if this value is set too high

When the fan is off, it will only start when the temperature exceeds this setting.

- Minimum Value: 0°C
- Maximum Value: 100°C

➔ **Temperature of Off [060]**

WARNING:

CPU failure can result if this value is set too high

The fan will turn off if the temperature falls below this value.

- Minimum Value: 0°C
- Maximum Value: 100°C

➔ **Start PWM [100]**

This is the initial speed of the fan when it first starts spinning.

- PWM Minimum Mode: 0
- PWM Maximum Mode: 100

➔ **Slope PWM [1 PWM]**

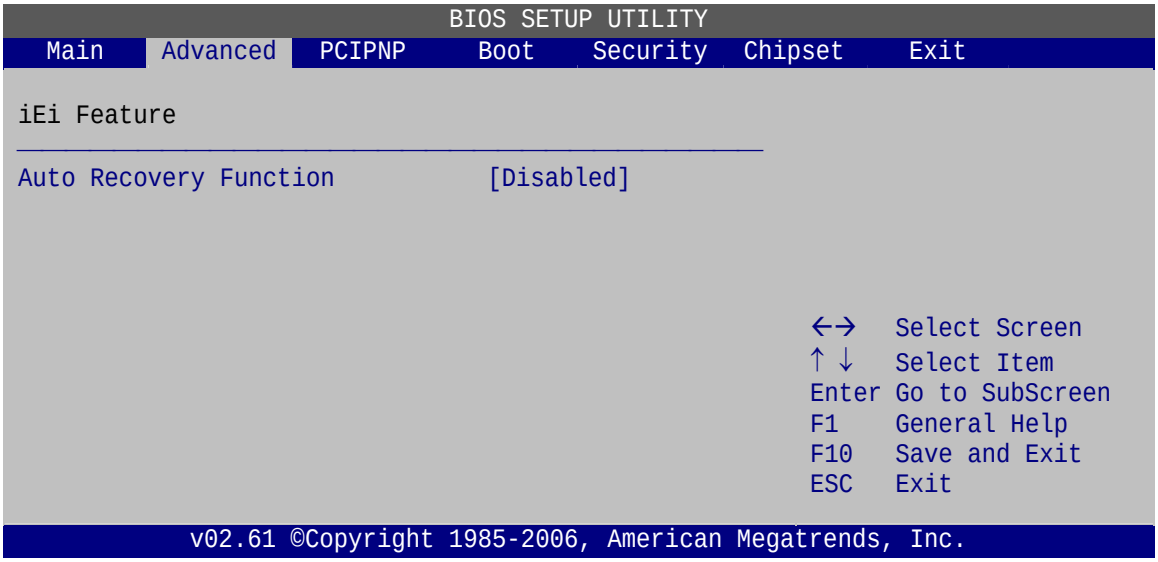
A bigger value will increase the fan speed in big amounts. A smaller value will increase the speed more gradually.

- 0 PWM
- 1 PWM
- 2 PWM

- 4 PWM
- 8 PWM
- 16 PWM
- 32 PWM
- 64 PWM

6.3.5 IEI Feature

Use the **IEI Feature** menu (**BIOS Menu 8**) to configure One Key Recovery function.



BIOS Menu 8: IEI Feature

➔ **Auto Recovery Function [Disabled]**

Use the **Auto Recovery Function** BIOS option to enable or disable the auto recovery function of the IEI One Key Recovery.

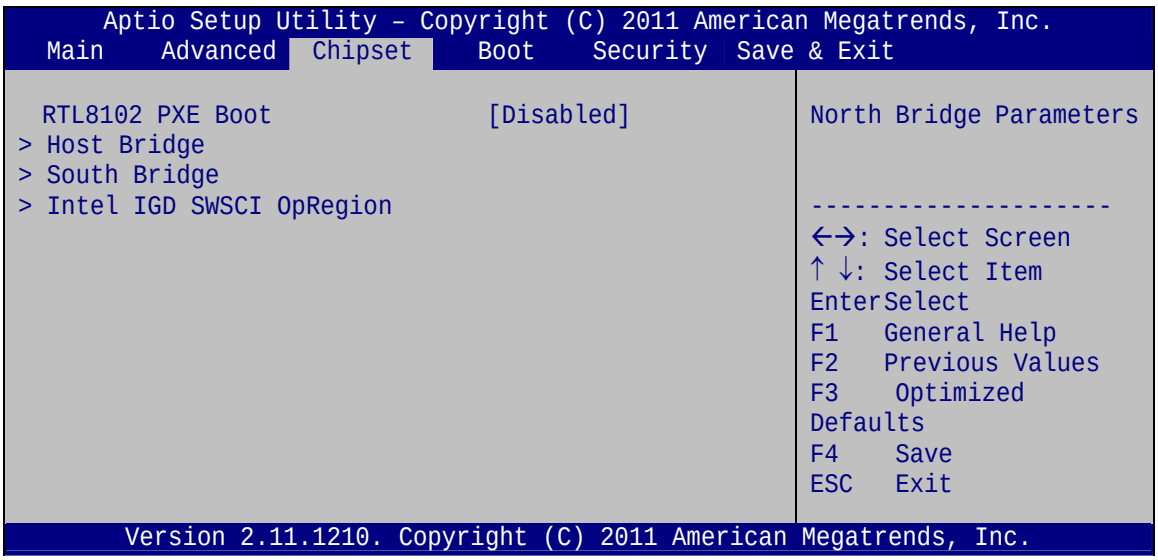
➔	**Disabled**	**DEFAULT**	Auto recovery function disabled
➔	**Enabled**		Auto recovery function enabled

6.4 Chipset

Use the **Chipset** menu (**BIOS Menu 9**) to access the Northbridge and Southbridge configuration menus

WARNING!

Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
RTL8102 PXE Boot [Disabled]
> Host Bridge
> South Bridge
> Intel IGD SWSCI OpRegion
North Bridge Parameters
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1 General Help
F2 Previous Values
F3 Optimized Defaults
F4 Save
ESC Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

BIOS Menu 9: Chipset

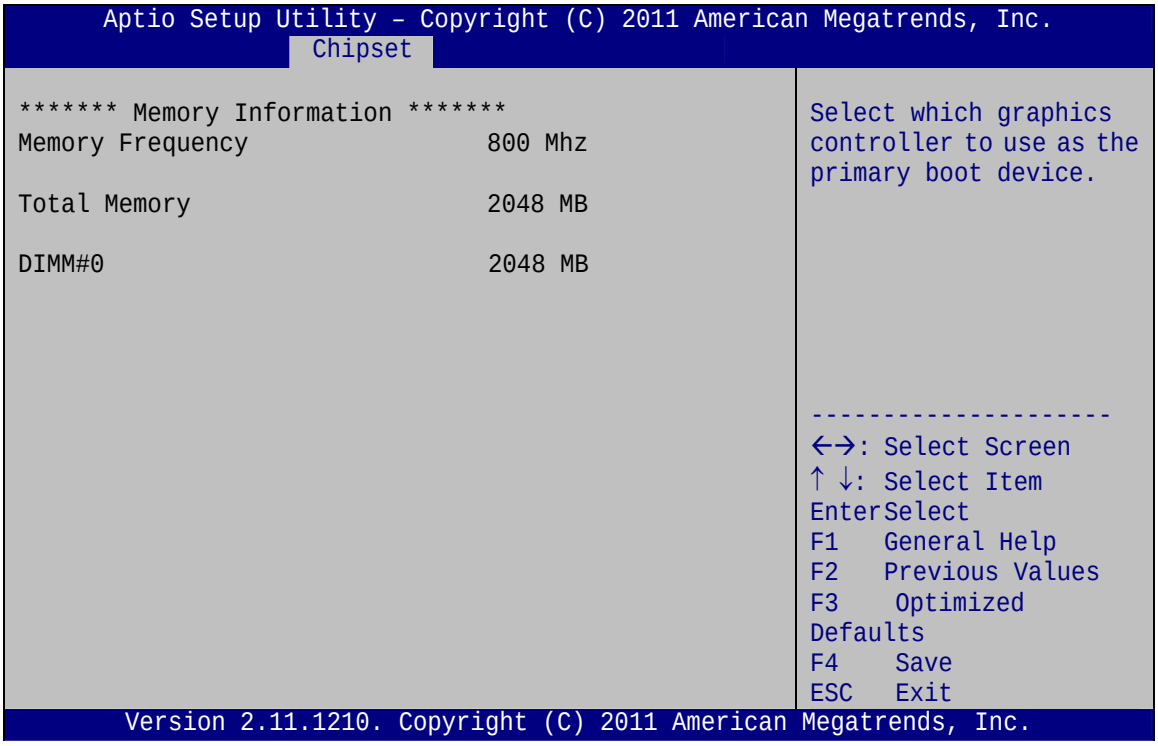
➔ **RTL8102 PXE Boot [Disabled]**

Use the **RTL8102 PXE Boot** option to enable or disable the boot option for GbE devices.

➔	**Disabled**	**DEFAULT**	Disables the RTL8102 PXE Boot option
➔	**Enabled**		Enables the RTL8102 PXE Boot option

6.4.1 Host Bridge Configuration

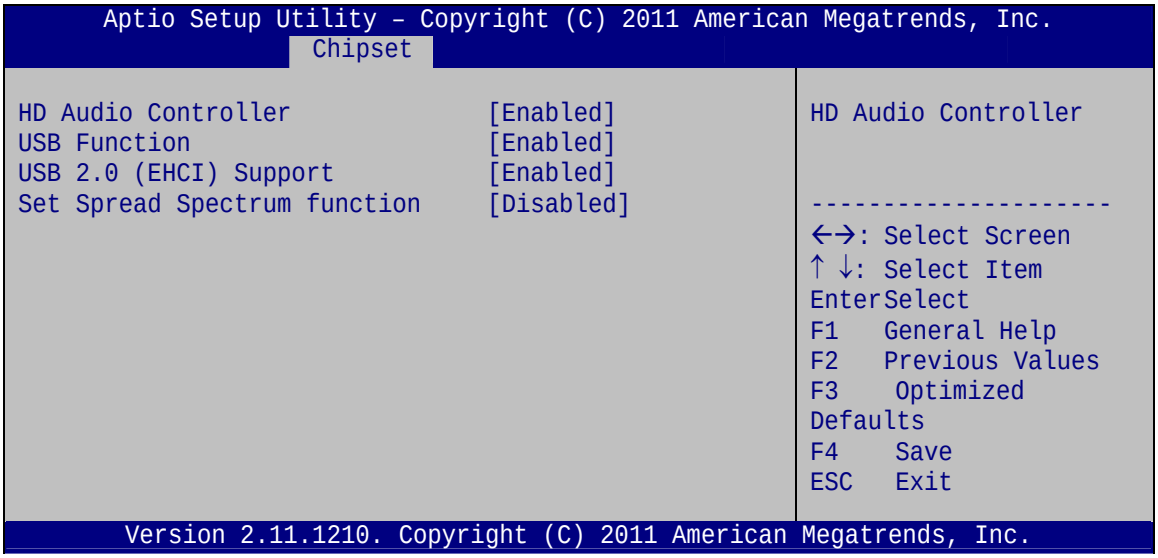
Use the **Host Bridge Configuration** menu (**BIOS Menu 10**) to configure the Northbridge chipset.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
******* Memory Information *******
Memory Frequency 800 Mhz
Total Memory 2048 MB
DIMM#0 2048 MB
Select which graphics controller to use as the primary boot device.
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1 General Help
F2 Previous Values
F3 Optimized Defaults
F4 Save
ESC Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

BIOS Menu 10: Host Bridge Chipset Configuration

6.4.2 South Bridge Configuration

Use the **South Bridge Configuration** menu (**BIOS Menu 11**) to configure the Southbridge chipset.



BIOS Menu 11:South Bridge Chipset Configuration

➔ **HD Audio Controller [Enabled]**

Use the **HD Audio Controller** option to enable or disable the High Definition Audio controller.

- ➔ **Enabled** **DEFAULT** The onboard High Definition Audio controller automatically detected and enabled
- ➔ **Disabled** The onboard High Definition Audio controller is disabled

➔ **USB Function [Enabled]**

Use the **USB Function** BIOS option to enable or disable USB function support.

- ➔ **Disabled** USB function support disabled
- ➔ **Enabled** **DEFAULT** USB function support enabled

➔ **USB 2.0 (EHCI) Support [Enabled]**

Use the **USB 2.0 (EHCI) Support** BIOS option to enable or disable the USB 2.0 controller.

➔ **Enabled** **DEFAULT** USB 2.0 controller enabled

➔ **Disabled** USB 2.0 controller disabled

➔ **Set Spread Spectrum Function [Disabled]**

The **Set Spread Spectrum Function** option can help to improve CPU EMI issues.

➔ **Disabled** **DEFAULT** The spread spectrum mode is disabled

➔ **Enabled** The spread spectrum mode is enabled

6.4.3 Intel IGD SWSCI OpRegion

Use the **Intel IGD SWSCI OpRegion** menu to configure the video device connected to the system.

```
Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
        Advanced
Intel IGD SWSCI OpRegion Configuration

DVMT Mode Select                [DVMT Mode]
DVMT/Fixed Memory               [Maximum]
IGD - Boot Type                 [VBIOS Default]

Select DVMT/FIXED Mode
Memory size used by
Internal Graphics Device

---------------------
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1   General Help
F2   Previous Values
F3    Optimized
Defaults
F4    Save
ESC   Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Menu 12: Intel IGD SWSCI OpRegion

➔ **DVMT Mode Select [DVMT Mode]**

Use the **DVMT Mode Select** option to select the Intel Dynamic Video Memory Technology (DVMT) operating mode.

➔ **Fixed Mode** A fixed portion of graphics memory is reserved as graphics memory.

➔ **DVMT Mode** **DEFAULT** Graphics memory is dynamically allocated according to the system and graphics needs.

➔ **DVMT/FIXED Memory [Maximum]**

Use the **DVMT/FIXED Memory** option to specify the maximum amount of memory that can be allocated as graphics memory. Configuration options are listed below.

- 128 MB
- 256 MB
- Maximum **Default**

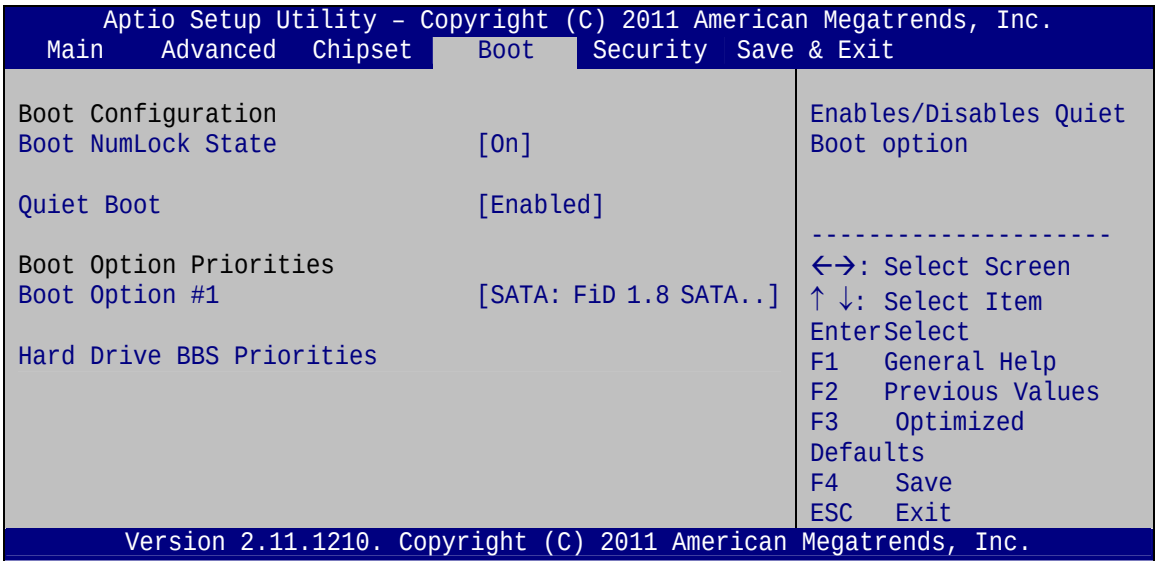
➔ **IGD - Boot Type [VBIOS Default]**

Use the **IGD - Boot Type** option to select the display device used by the system when it boots. Configuration options are listed below.

- VBIOS Default **DEFAULT**
- CRT (Docking use)
- LFP
- CRT + LFP (Docking use)

6.5 Boot

Use the **Boot** menu (**BIOS Menu 13**) to configure system boot options.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Boot Configuration
Boot NumLock State [On]
Quiet Boot [Enabled]
Boot Option Priorities
Boot Option #1 [SATA: FiD 1.8 SATA..]
Hard Drive BBS Priorities
Enables/Disables Quiet Boot option
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1 General Help
F2 Previous Values
F3 Optimized Defaults
F4 Save
ESC Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

BIOS Menu 13: Boot

➔ **Bootup NumLock State [On]**

Use the **Bootup NumLock State** BIOS option to specify if the number lock setting must be modified during boot up.

➔ **On** **DEFAULT** Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

➔ **Off** Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.

➔ **Quiet Boot [Enabled]**

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

➔ **Disabled**		Normal POST messages displayed
➔ **Enabled**	**DEFAULT**	OEM Logo displayed instead of POST messages

➔ **Boot Option #1 [SATA: FiD 1.8 SATA…]**

Use the **Boot Option #1** option to specify the boot priority from the available devices.

➔ **Hard Drive BBS Priorities**

Use the **Hard Drive BBS Priorities** option to set the order of the legacy devices in this group.

6.6 Security

Use the **Security** menu (**BIOS Menu 14**) to set system and user passwords.

```
      Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
  Main    Advanced   Chipset    Boot    Security  Save & Exit

Password Description                          Set Setup Administrator
                                              Password
If ONLY the Administrator's password is set,
then this only limits access to Setup and is  ---------------------
only asked for when entering Setup            ←→: Select Screen
If ONLY the User's password is set, then this ↑ ↓: Select Item
is a power on password and must be entered to EnterSelect
boot or enter Setup. In Setup the User will   F1   General Help
have Administrator rights.                    F2   Previous Values
                                              F3    Optimized
Administrator Password                        Defaults
User Password                                 F4    Save
                                              ESC   Exit
      Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Menu 14: Security

➔ **Administrator Password**

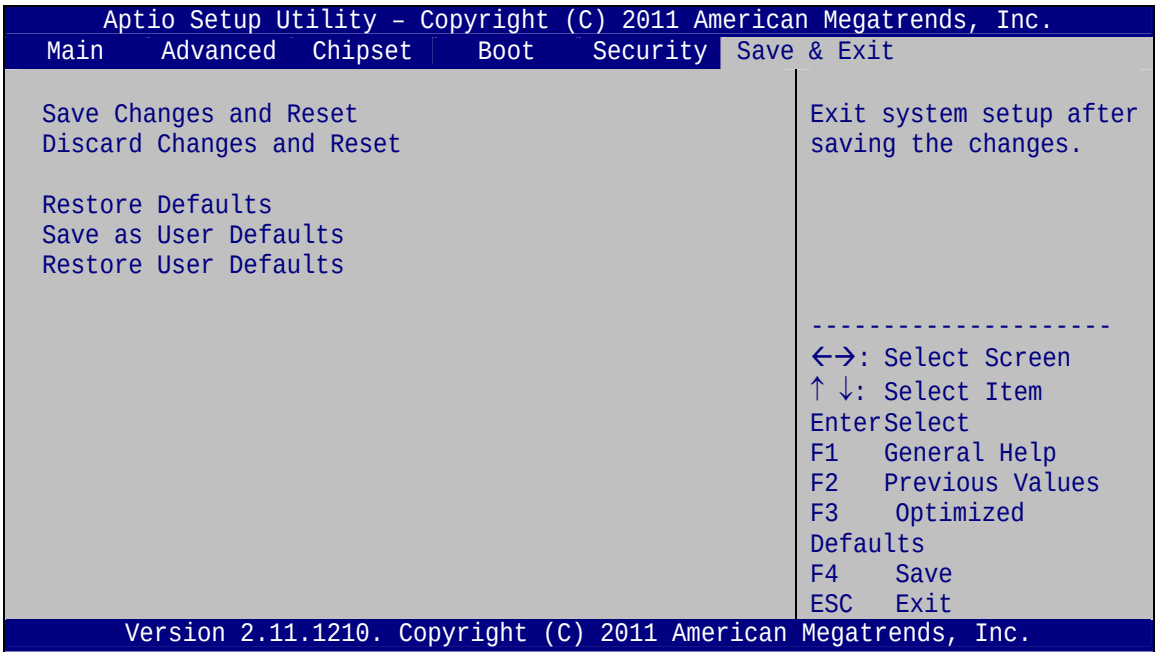
Use the **Administrator Password** to set or change a administrator password.

➔ **User Password**

Use the **User Password** to set or change a user password.

6.7 Exit

Use the **Exit** menu (**BIOS Menu 15**) to load default BIOS values, optimal failsafe values and to save configuration changes.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Reset
Discard Changes and Reset
Restore Defaults
Save as User Defaults
Restore User Defaults
Exit system setup after saving the changes.
←→: Select Screen
↑ ↓: Select Item
Enter Select
F1 General Help
F2 Previous Values
F3 Optimized Defaults
F4 Save
ESC Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

BIOS Menu 15:Exit

➔ **Save Changes and Reset**

Use the **Save Changes and Reset** option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

➔ **Discard Changes and Reset**

Use the **Discard Changes and Reset** option to exit the system without saving the changes made to the BIOS configuration setup program.

➔ **Restore Defaults**

Use the **Restore Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F3 key can be used for this operation.**

➔ **Save as User Defaults**

Use the **Save as User Defaults** option to save the changes done so far as user defaults.

➔ **Restore User Defaults**

Use the **Restore User Defaults** option to restore the user defaults to all the setup options.

Chapter

7

System Maintenance

7.1 System Maintenance Introduction

If the components of the ICEFIRE-T10A fail they must be replaced, such as the wireless LAN module or the motherboard. Please contact the system reseller or vendor to purchase the replacement parts.

7.2 Motherboard Replacement

In the case of motherboard failure, please contact an IEI sales representative, reseller or system vendor. The motherboard is accessible after opening the rear cover.

Appendix

A

Safety Precautions

WARNING:

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the ICEFIRE-T10A.

A.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

A.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the ICEFIRE-T10A is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the ICEFIRE-T10A is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range***. Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the ICEFIRE-T10A chassis is opened when the ICEFIRE-T10A is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the ICEFIRE-T10A.
- ***If considerable amounts of dust, water, or fluids enter the ICEFIRE-T10A***, turn off the power supply immediately, unplug the power cord, and contact the ICEFIRE-T10A vendor.
- **DO NOT**:
  - Drop the ICEFIRE-T10A against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object
  - In a site where the ambient temperature exceeds the rated temperature

A.1.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the installation of the ICEFIRE-T10A may result in permanent damage to the ICEFIRE-T10A and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the ICEFIRE-T10A. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the ICEFIRE-T10A is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding***: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: When configuring or working with an electrical component, place it on an antic-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component***: When handling the electrical component, hold the electrical component by its edges.

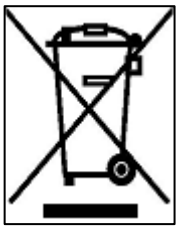
A.1.3 Product Disposal

CAUTION:

Risk of explosion if battery is replaced by and incorrect type. Only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the ICEFIRE-T10A, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the ICEFIRE-T10A, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior of the ICEFIRE-T10A does not require cleaning. Keep fluids away from the ICEFIRE-T10A interior.
- Be cautious of all small removable components when vacuuming the ICEFIRE-T10A.
- Turn the ICEFIRE-T10A off before cleaning the ICEFIRE-T10A.
- Never drop any objects or liquids through the openings of the ICEFIRE-T10A.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the ICEFIRE-T10A.
- Avoid eating, drinking and smoking within vicinity of the ICEFIRE-T10A.

A.2.2 Cleaning Tools

Some components in the ICEFIRE-T10A may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the ICEFIRE-T10A.

- ***Cloth*** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the ICEFIRE-T10A.
- ***Water or rubbing alcohol*** – A cloth moistened with water or rubbing alcohol can be used to clean the ICEFIRE-T10A.
- ***Using solvents*** – The use of solvents is not recommended when cleaning the ICEFIRE-T10A as they may damage the plastic parts.
- ***Vacuum cleaner*** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the ICEFIRE-T10A. Dust and dirt can restrict the airflow in the ICEFIRE-T10A and cause its circuitry to corrode.
- ***Cotton swabs*** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- ***Foam swabs*** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

B

One Key Recovery

B.1 One Key Recovery Introduction

The IEI one key recovery is an easy-to-use front end for the Norton Ghost system backup and recovery tool. The one key recovery provides quick and easy shortcuts for creating a backup and reverting to that backup or for reverting to the factory default settings.

The IEI One Key Recovery tool menu is shown below.

Figure B-1: IEI One Key Recovery Tool Menu

Prior to using the IEI One Key Recovery tool (as shown in **Figure B-1**) to backup or restore Windows system, five setup procedures are required.

1. Hardware and BIOS setup (see **Section B.2.1**)
2. Create partitions (see **Section B.2.2**)
3. Install operating system, drivers and system applications (see **Section B.2.3**)
4. Build-up recovery partition (see **Section B.2.4**)
5. Create factory default image (see **Section B.2.5**)

After completing the five initial setup procedures as described above, users can access the recovery tool by pressing <**F3**> while booting up the system. The detailed information of each function is described in **Section B.4**.

NOTE:

The initial setup procedures for Linux system are described in **Section B.3**.

B.1.1 System Requirement

NOTE:

The recovery CD can only be used with IEI products. The software will fail to run and a warning message will appear when used on non-IEI hardware.

To create the system backup, the main storage device must be split into two partitions (three partitions for Linux). The first partition will be for the operating system, while the second partition will be invisible to the operating system and contain the backup made by the one key recovery software.

The partition created for recovery images must be big enough to contain both the factory default image and the user backup image. The size must be calculated before creating the partitions. Please take the following table as a reference when calculating the size of the partition.

	OS	OS Image after Ghost	Compression Ratio
Windows® 7	7 GB	5 GB	70%
Windows® XPE	776 MB	560 MB	70%
Windows® CE 6.0	36 MB	28 MB	77%

NOTE:

Specialized tools are required to change the partition size if the operating system is already installed.

B.1.2 Supported Operating System

The recovery CD is compatible with both Microsoft Windows and Linux operating system (OS). The supported OS versions are listed below.

- Microsoft Windows
  - Windows XP (Service Pack 2 or 3 required)
  - Windows Vista
  - Windows 7
  - Windows CE 5.0
  - Windows CE 6.0
  - Windows XP Embedded
- Linux
  - Fedora Core 12 (Constantine)
  - Fedora Core 11 (Leonidas)
  - Fedora Core 10 (Cambridge)
  - Fedora Core 8 (Werewolf)
  - Fedora Core 7 (Moonshine)
  - RedHat RHEL-5.4
  - RedHat 9 (Ghirke)
  - Ubuntu 8.10 (Intrepid)
  - Ubuntu 7.10 (Gutsy)
  - Ubuntu 6.10 (Edgy)
  - Debian 5.0 (Lenny)
  - Debian 4.0 (Etch)
  - SuSe 11.2
  - SuSe 10.3

NOTE:

Installing unsupported OS versions may cause the recovery tool to fail.

B.2 Setup Procedure for Windows

Prior to using the recovery tool to backup or restore Windows system, a few setup procedures are required.

Step 1: Hardware and BIOS setup (see **Section B.2.1**)

Step 2: Create partitions (see **Section B.2.2**)

Step 3: Install operating system, drivers and system applications (see **Section B.2.3**)

Step 4: Build-up recovery partition (see **Section B.2.4**)

Step 5: Create factory default image (see **Section B.2.5**)

The detailed descriptions are described in the following sections.

NOTE:

The setup procedures described below are for Microsoft Windows operating system users. For Linux system, most setup procedures are the same with Microsoft Windows except for several steps which is described in **Section B.3**.

B.2.1 Hardware and BIOS Setup

Step 1: Make sure the system is powered off and unplugged.

Step 2: Install a hard drive or SSD in the system. An unformatted and unpartitioned disk is recommended.

Step 3: Connect an optical disk drive to the system and insert the recovery CD.

Step 4: Turn on the system.

Step 5: Press the <**DELETE**> key as soon as the system is turned on to enter the BIOS.

Step 6: Select the connected optical disk drive as the 1st boot device. (**Boot → Boot Device Priority → 1st Boot Device**).

Step 7: Save changes and restart the computer. Continue to the next section for instructions on partitioning the internal storage.

B.2.2 Create Partitions

To create the system backup, the main storage device must be split into two partitions (three partitions for Linux). The first partition will be for the operating system, while the second partition will be invisible to the operating system and contain the backup made by the one key recovery software.

Step 1: Put the recovery CD in the optical drive of the system.

Step 2: **Boot the system from recovery CD**. When prompted, press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient!

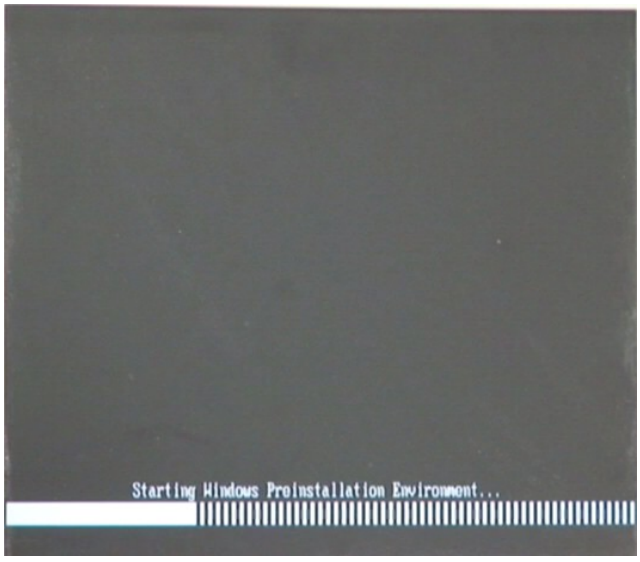


Figure B-2: Launching the Recovery Tool

Step 3: The recovery tool setup menu is shown as below.

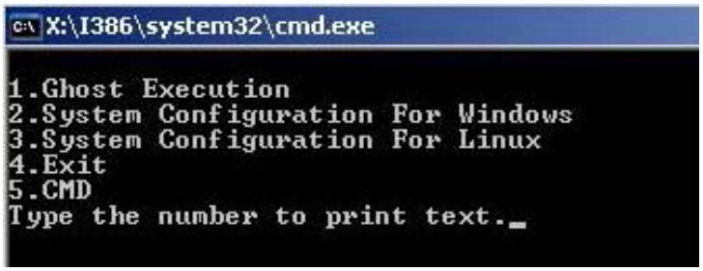


Figure B-3: Recovery Tool Setup Menu

Step 4: Press <**5**> then <Enter>.

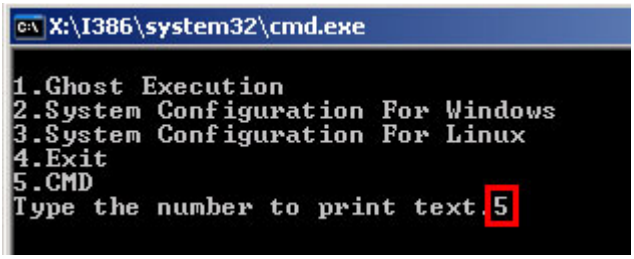


Figure B-4: Command Mode

Step 5: The command prompt window appears. Type the following commands (marked in red) to create two partitions. One is for the OS installation; the other is for saving recovery files and images which will be an invisible partition.

(Press <Enter> after entering each line below)

system32>diskpart

DISKPART>list vol

DISKPART>sel disk 0

DISKPART>create part pri size= ___

DISKPART>assign letter=N

DISKPART>create part pri size= ___

DISKPART>assign letter=F

DISKPART>exit

system32>format N: /fs:ntfs /q /y

system32>format F: /fs:ntfs /q /v:Recovery /y

system32>exit

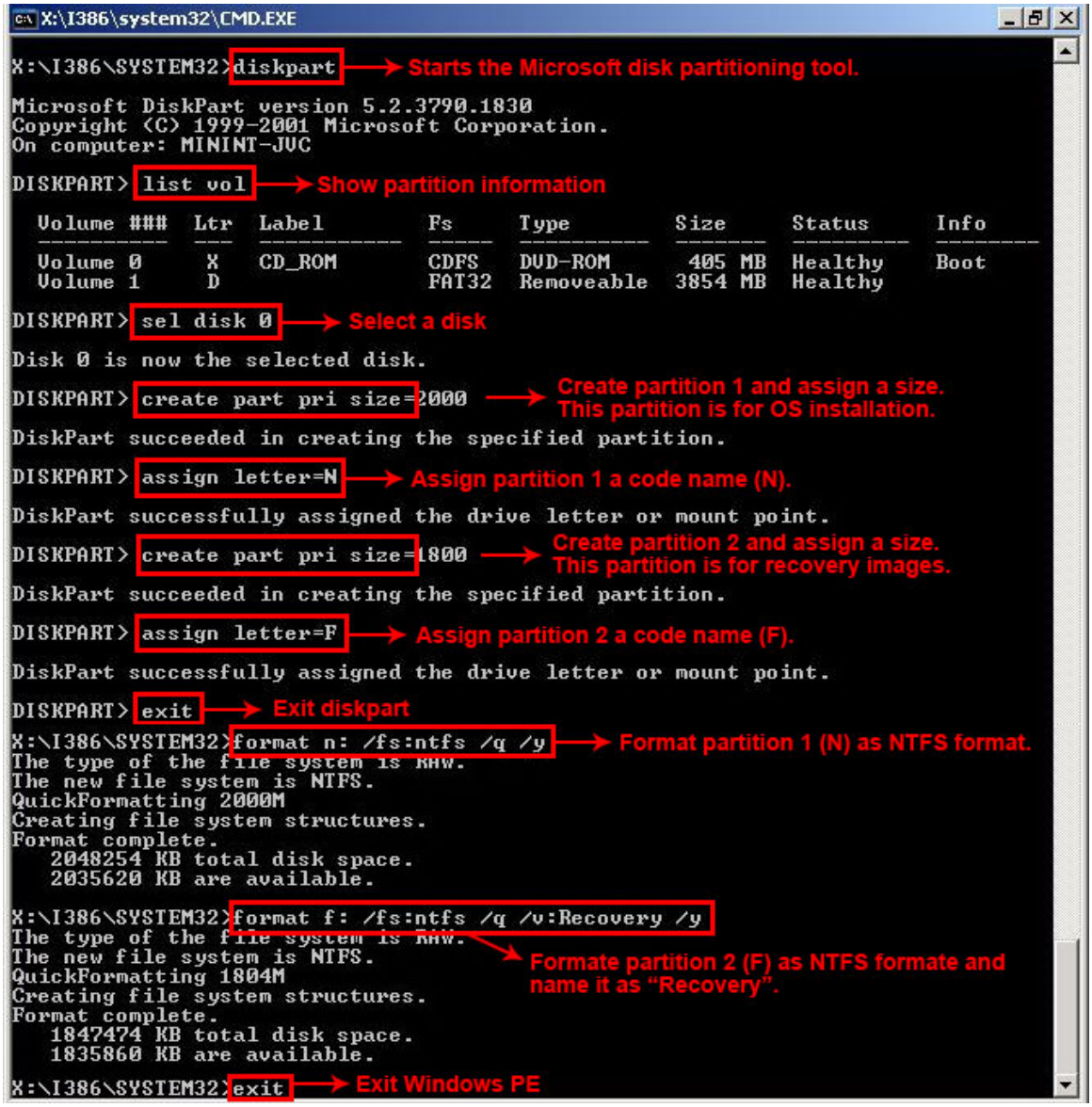
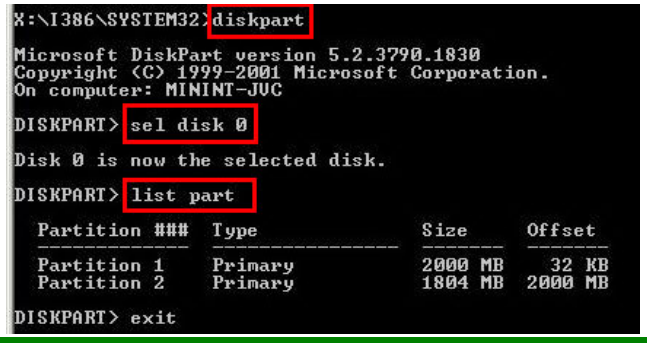

X:\I386\system32\CMD.EXE
X:\I386\SYSTEM32>diskpart
Starts the Microsoft disk partitioning tool.
Microsoft DiskPart version 5.2.3790.1830
Copyright (C) 1999-2001 Microsoft Corporation.
On computer: MININT-JVC
DISKPART> list vol
Show partition information
Volume ### Ltr Label Fs Type Size Status Info
Volume 0 X CD_ROM CDFS DVD-ROM 405 MB Healthy Boot
Volume 1 D FAT32 Removeable 3854 MB Healthy
DISKPART> sel disk 0
Select a disk
Disk 0 is now the selected disk.
DISKPART> create part pri size=2000
Create partition 1 and assign a size.
This partition is for OS installation.
DiskPart succeeded in creating the specified partition.
DISKPART> assign letter=N
Assign partition 1 a code name (N).
DiskPart successfully assigned the drive letter or mount point.
DISKPART> create part pri size=1800
Create partition 2 and assign a size.
This partition is for recovery images.
DiskPart succeeded in creating the specified partition.
DISKPART> assign letter=F
Assign partition 2 a code name (F).
DiskPart successfully assigned the drive letter or mount point.
DISKPART> exit
Exit diskpart
X:\I386\SYSTEM32>format n: /fs:ntfs /q /y
Format partition 1 (N) as NTFS format.
The type of the file system is RAW.
The new file system is NTFS.
QuickFormatting 2000M
Creating file system structures.
Format complete.
2048254 KB total disk space.
2035620 KB are available.
X:\I386\SYSTEM32>format f: /fs:ntfs /q /v:Recovery /y
The type of the file system is RAW.
The new file system is NTFS.
QuickFormatting 1804M
Creating file system structures.
Format complete.
1847474 KB total disk space.
1835860 KB are available.
Formate partition 2 (F) as NTFS formate and
name it as "Recovery".
X:\I386\SYSTEM32>exit
Exit Windows PE

Figure B-5: Partition Creation Commands

NOTE:

Use the following commands to check if the partitions were created successfully.


X:\I386\SYSTEM32>diskpart
Microsoft DiskPart version 5.2.3790.1830
Copyright (C) 1999-2001 Microsoft Corporation.
On computer: MININT-JVC
DISKPART> sel disk 0
Disk 0 is now the selected disk.
DISKPART> list part
Partition ### Type Size Offset
Partition 1 Primary 2000 MB 32 KB
Partition 2 Primary 1804 MB 2000 MB
DISKPART> exit

Step 6: Press any key to exit the recovery tool and automatically reboot the system.

Please continue to the following procedure: Build-up Recovery Partition.

B.2.3 Install Operating System, Drivers and Applications

Install the operating system onto the unlabelled partition. The partition labeled as "Recovery" is for use by the system recovery tool and should not be used for installing the operating system or any applications.

NOTE:

The operating system installation program may offer to reformat the chosen partition. DO NOT format the partition again. The partition has already been formatted and is ready for installing the new operating system.

To install the operating system, insert the operating system installation CD into the optical drive. Restart the computer and follow the installation instructions.

B.2.4 Build-up Recovery Partition

Step 1: Put the recover CD in the optical drive.

Step 2: Start the system.

Step 3: **Boot the system from recovery CD**. When prompted, press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient!

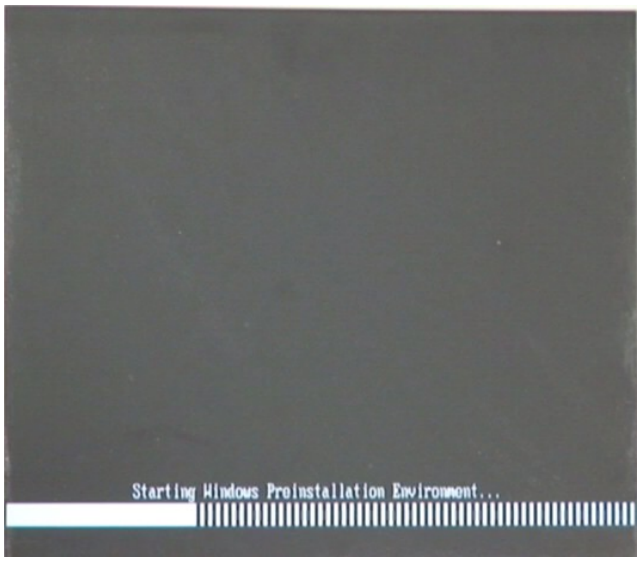


Figure B-6: Launching the Recovery Tool

Step 4: When the recovery tool setup menu appears, press <**2**> then <Enter>.

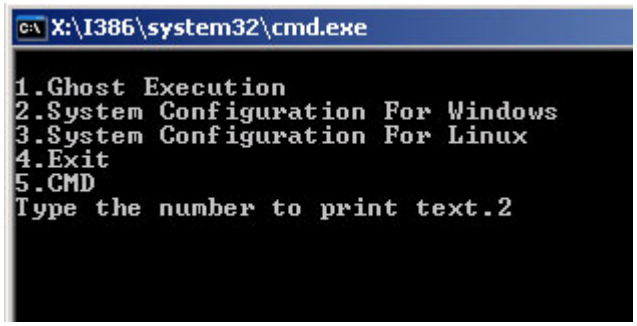


Figure B-7: System Configuration for Windows

Step 5: The Symantec Ghost window appears and starts configuring the system to build-up a recovery partition. In this process, the partition which is created for

recovery files in **Section B.2.2** is hidden and the recovery tool is saved in this partition.

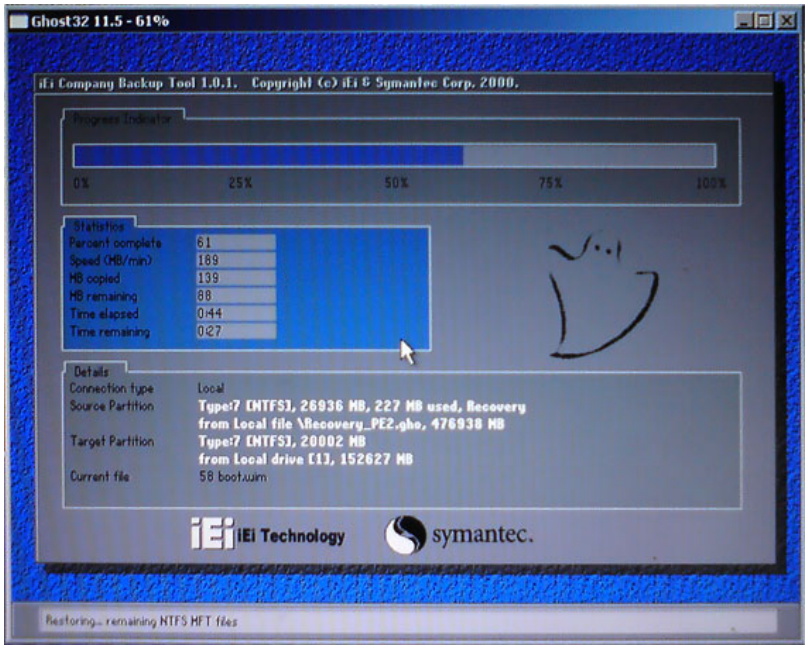


Figure B-8: Build-up Recovery Partition

Step 6: After completing the system configuration, press any key in the following window to reboot the system.

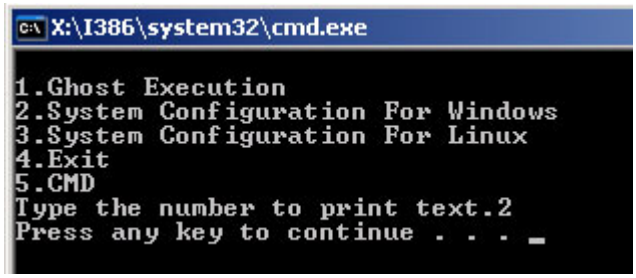


Figure B-9: Press any key to continue

Step 7: Eject the recovery CD.

B.2.5 Create Factory Default Image

NOTE:

Before creating the factory default image, please configure the system to a factory default environment, including driver and application installations.

To create a factory default image, please follow the steps below.

Step 1: Turn on the system. When the following screen displays (**Figure B-10**), press the <**F3**> key to access the recovery tool. The message will display for 10 seconds, please press F3 before the system boots into the operating system.

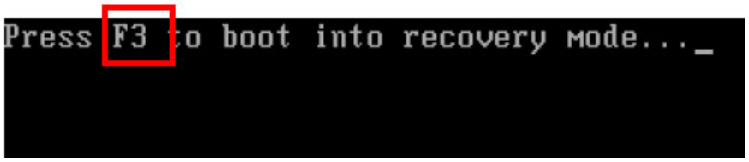


Figure B-10: Press F3 to Boot into Recovery Mode

Step 2: The recovery tool menu appears. Type <**4**> and press <**Enter**>. (**Figure B-11**)

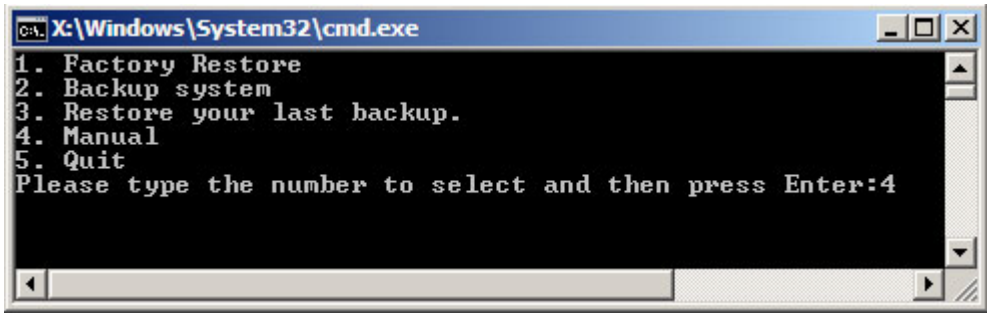


Figure B-11: Recovery Tool Menu

Step 3: The About Symantec Ghost window appears. Click **OK** button to continue.

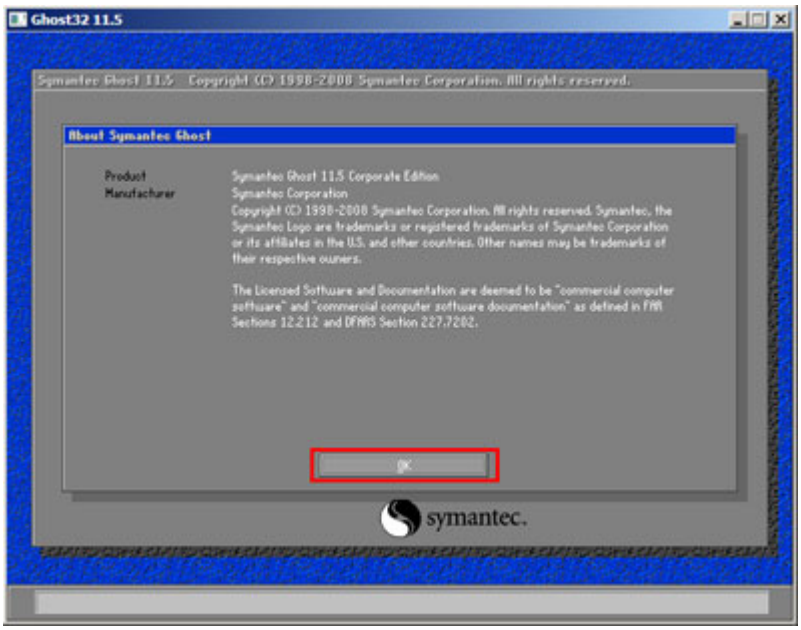


Figure B-12: About Symantec Ghost Window

Step 4: Use mouse to navigate to the option shown below (**Figure B-13**).

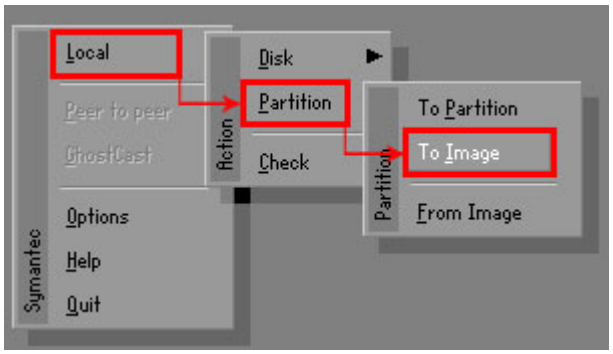


Figure B-13: Symantec Ghost Path

Step 5: Select the local source drive (Drive 1) as shown in **Figure B-14**. Then click OK.

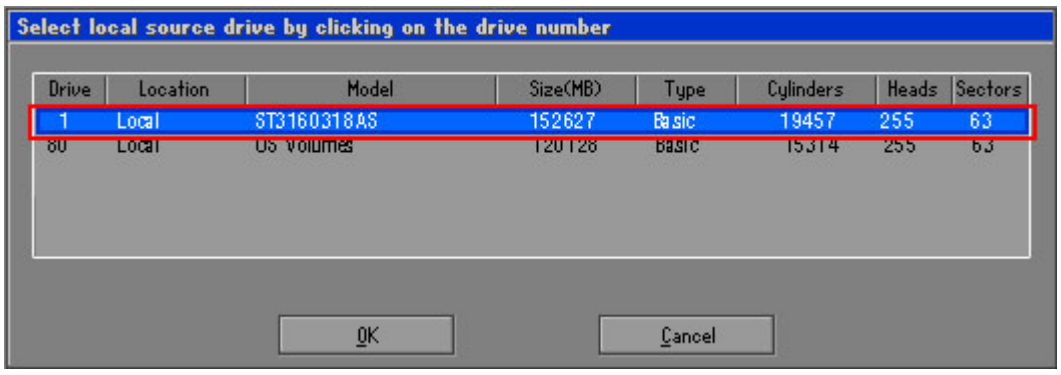


Figure B-14: Select a Local Source Drive

Step 6: Select a source partition (Part 1) from basic drive as shown in **Figure B-15**. Then click OK.

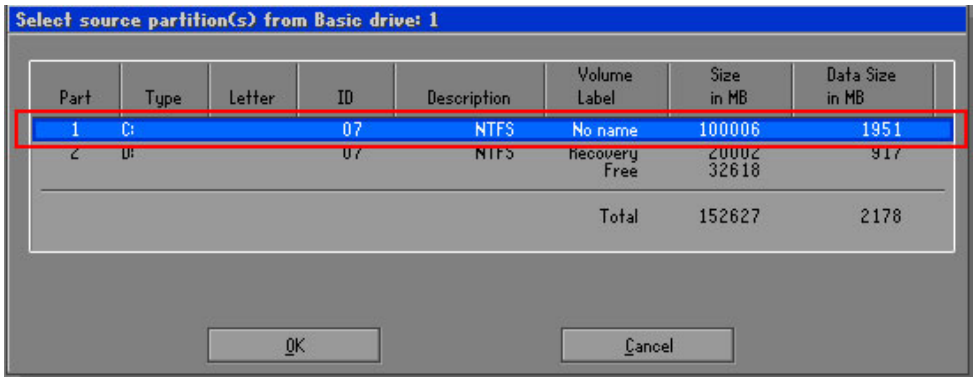


Figure B-15: Select a Source Partition from Basic Drive

Step 7: Select **1.2: [Recovery] NTFS drive** and enter a file name called **iei** (**Figure B-16**). Click **Save**. The factory default image will then be saved in the selected recovery drive and named IEI.GHO.

WARNING:

The file name of the factory default image must be **iei.GHO**.

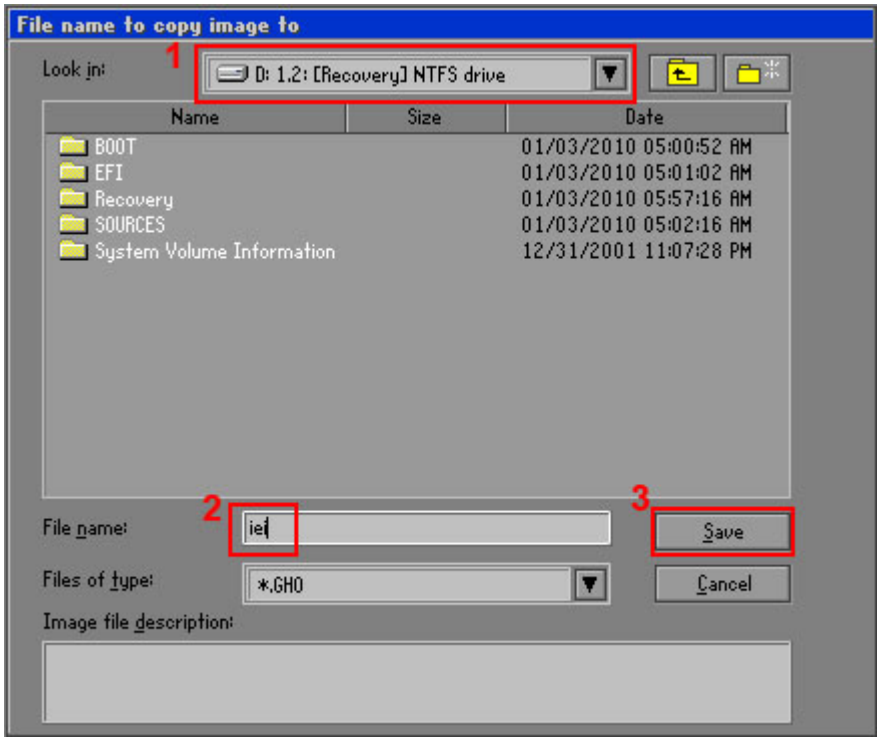


Figure B-16: File Name to Copy Image to

Step 8: When the Compress Image screen in **Figure B-17** prompts, click **High** to make the image file smaller.

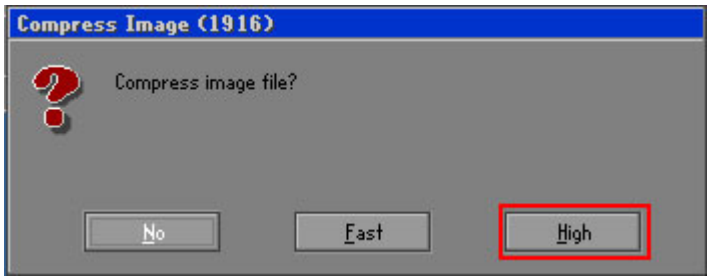


Figure B-17: Compress Image

Step 9: The Proceed with partition image creation window appears, click **Yes** to continue.

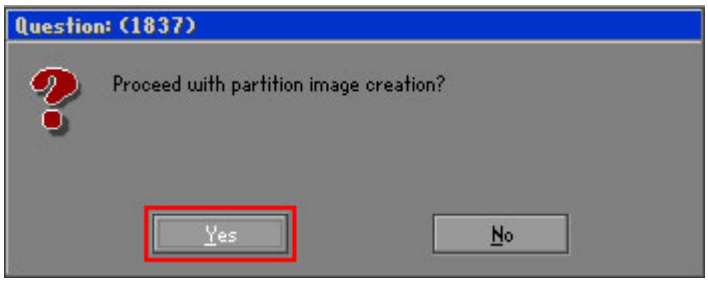


Figure B-18: Image Creation Confirmation

Step 10: The Symantec Ghost starts to create the factory default image (**Figure B-19**).

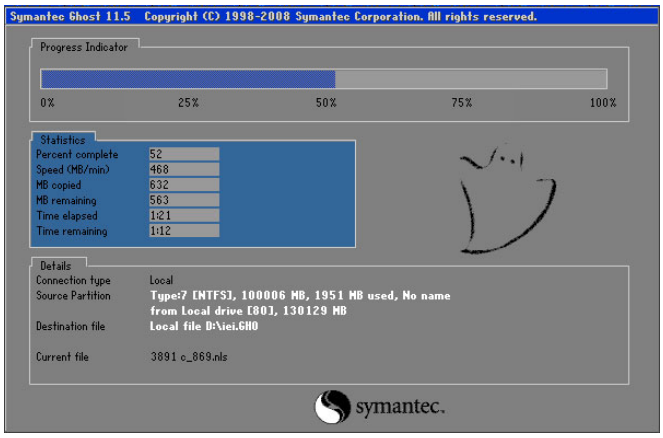


Figure B-19: Image Creation Process

Step 11: When the image creation completes, a screen prompts as shown in **Figure B-20**. Click **Continue** and close the Ghost window to exit the program.

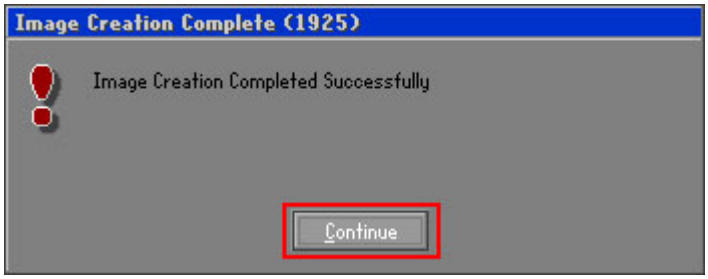


Figure B-20: Image Creation Complete

Step 12: The recovery tool main menu window is shown as below. Press any key to reboot the system.

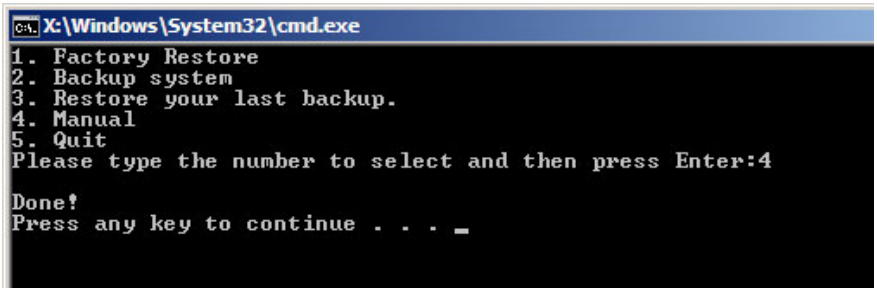


Figure B-21: Press Any Key to Continue

B.3 Setup Procedure for Linux

The initial setup procedures for Linux system are mostly the same with the procedure for Microsoft Windows. Please follow the steps below to setup recovery tool for Linux OS.

Step 1: **Hardware and BIOS setup**. Refer to **Section B.2.1**.

Step 2: **Install Linux operating system**. Make sure to install GRUB (v0.97 or earlier) MBR type and Ext3 partition type. Leave enough space on the hard drive to create the recover partition later.

NOTE:

If the Linux OS is not installed with GRUB (v0.97 or earlier) and Ext3, the Symantec Ghost may not function properly.

While installing Linux OS, please create two partitions:

- Partition 1: ***/***
- Partition 2: **SWAP**

NOTE:

Please reserve enough space for partition 3 for saving recovery images.

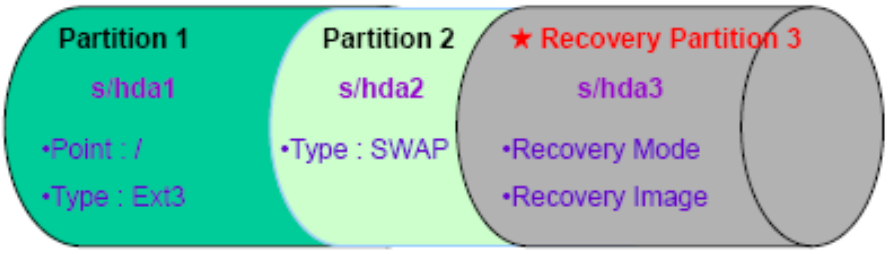


Figure B-22: Partitions for Linux

Step 3: **Create a recovery partition**. Insert the recovery CD into the optical disk drive. Follow **Step 1** ~ **Step 3** described in **Section B.2.2**. Then type the following commands (marked in red) to create a partition for recovery images.

system32>diskpart

DISKPART>list vol

DISKPART>sel disk 0

DISKPART>create part pri size= ___

DISKPART>assign letter=N

DISKPART>exit

system32>format N: /fs:ntfs /q /v:Recovery /y

system32>exit

Step 4: **Build-up recovery partition**. Press any key to boot from the recovery CD. It will take a while to launch the recovery tool. Please be patient. When the recovery tool setup menu appears, type <**3**> and press <Enter> (**Figure B-23**). The Symantec Ghost window appears and starts configuring the system to build-up a recovery partition. After completing the system configuration, press any key to reboot the system. Eject the recovery CD.

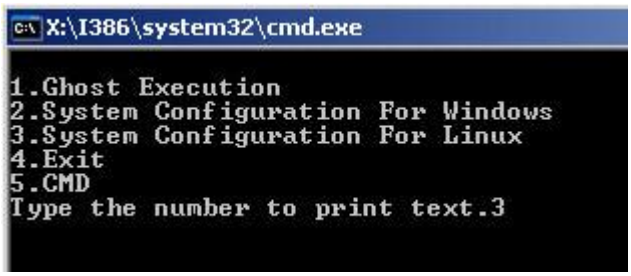


Figure B-23: System Configuration for Linux

Step 5: **Access the recovery tool main menu by modifying the "menu.lst"**. To first access the recovery tool main menu, the menu.lst must be modified. In Linux system, enter Administrator (root). When prompt appears, type:

cd /boot/grub

vi menu.lst

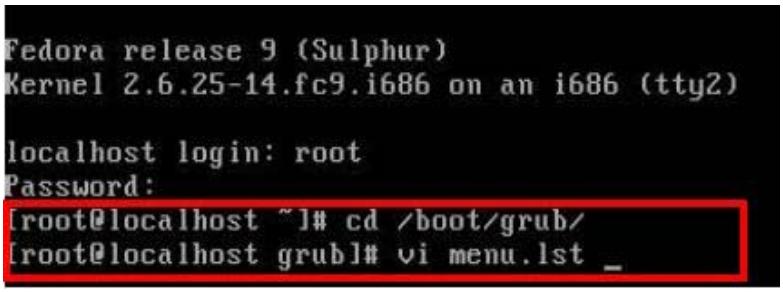
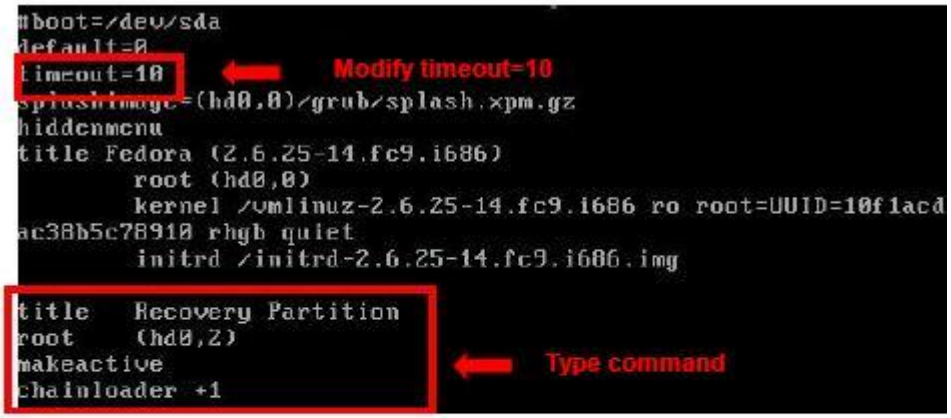


Figure B-24: Access menu.lst in Linux (Text Mode)

Step 6: Modify the menu.lst as shown below.



- Type command:

  title Recovery Partition

  root (hd0,2)

  makeactive

  chainloader +1

Step 7: The recovery tool menu appears. (**Figure B-25**)

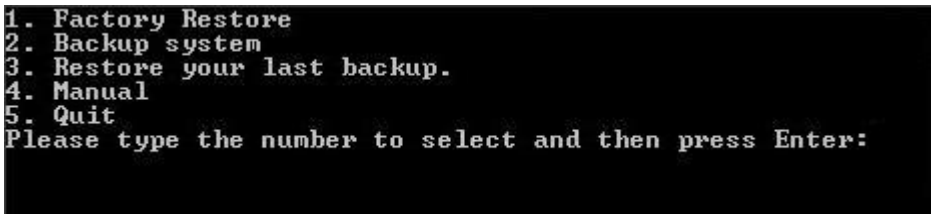

1. Factory Restore
2. Backup system
3. Restore your last backup.
4. Manual
5. Quit
Please type the number to select and then press Enter:

Figure B-25: Recovery Tool Menu

Step 8: **Create a factory default image**. Follow **Step 2** ~ **Step 12** described in **Section B.2.5** to create a factory default image.

B.4 Recovery Tool Functions

After completing the initial setup procedures as described above, users can access the recovery tool by pressing <**F3**> while booting up the system. The main menu of the recovery tool is shown below.

Figure B-26: Recovery Tool Main Menu

The recovery tool has several functions including:

1. Factory Restore: Restore the factory default image (iei.GHO) created in Section B.2.5.
2. **Backup system**: Create a system backup image (iei_user.GHO) which will be saved in the hidden partition.
3. **Restore your last backup**: Restore the last system backup image
4. **Manual**: Enter the Symantec Ghost window to configure manually.
5. **Quit**: Exit the recovery tool and restart the system.

WARNING:

Please do not turn off the system power during the process of system recovery or backup.

WARNING:

All data in the system will be deleted during the system recovery. Please backup the system files before restoring the system (either Factory Restore or Restore Backup).

B.4.1 Factory Restore

To restore the factory default image, please follow the steps below.

Step 1: Type <**1**> and press <**Enter**> in the main menu.

Step 2: The Symantec Ghost window appears and starts to restore the factory default. A factory default image called **iei.GHO** is created in the hidden Recovery partition.

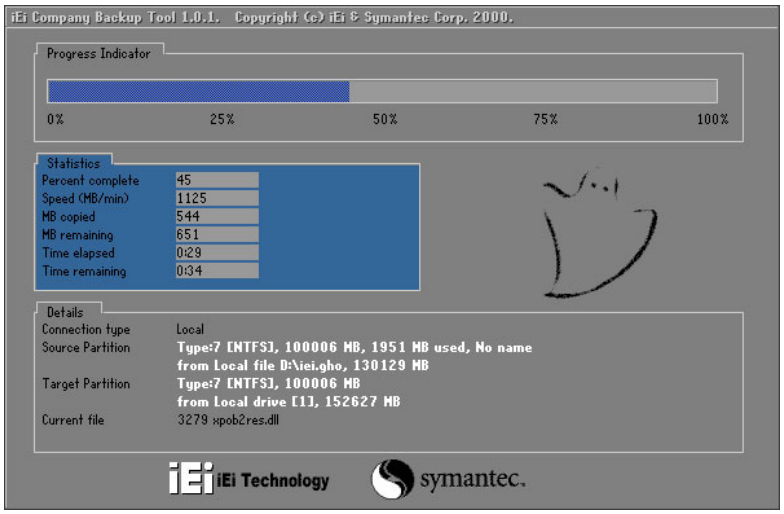


Figure B-27: Restore Factory Default

Step 3: The screen is shown as in **Figure B-28** when completed. Press any key to reboot the system.

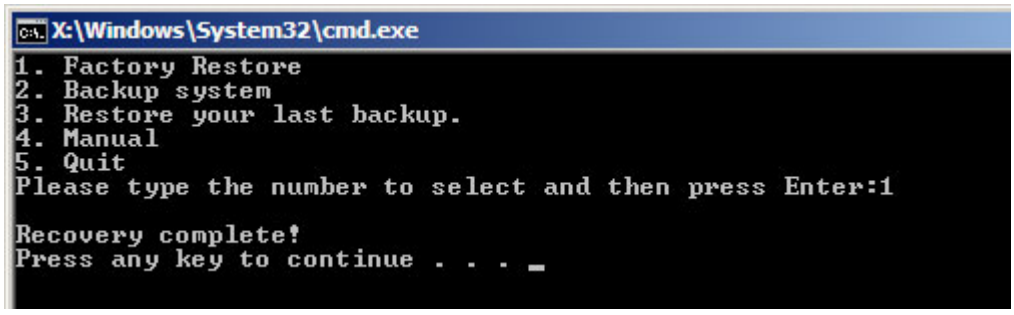

X:\Windows\System32\cmd.exe
1. Factory Restore
2. Backup system
3. Restore your last backup.
4. Manual
5. Quit
Please type the number to select and then press Enter:1
Recovery complete!
Press any key to continue . . .

Figure B-28: Recovery Complete Window

B.4.2 Backup System

To backup the system, please follow the steps below.

Step 1: Type <**2**> and press <**Enter**> in the main menu.

Step 2: The Symantec Ghost window appears and starts to backup the system. A backup image called **iei_user.GHO** is created in the hidden Recovery partition.

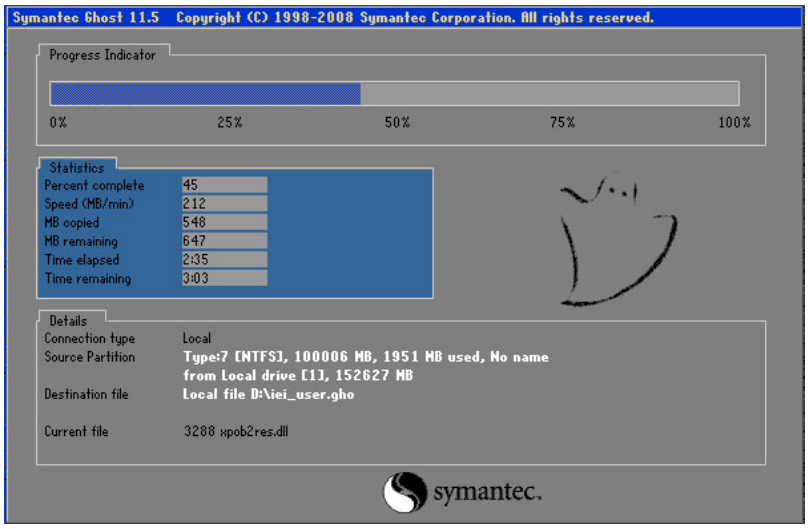


Figure B-29: Backup System

Step 3: The screen is shown as in **Figure B-30** when system backup is completed. Press any key to reboot the system.

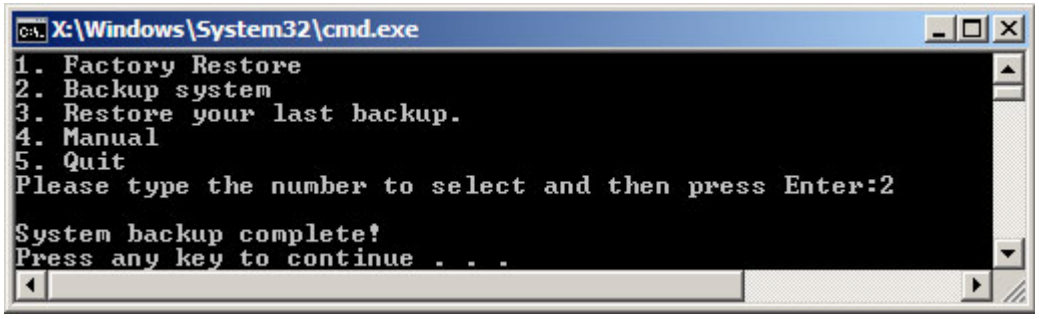

X:\Windows\System32\cmd.exe
1. Factory Restore
2. Backup system
3. Restore your last backup.
4. Manual
5. Quit
Please type the number to select and then press Enter:2
System backup complete!
Press any key to continue . . .

Figure B-30: System Backup Complete Window

B.4.3 Restore Your Last Backup

To restore the last system backup, please follow the steps below.

Step 1: Type <**3**> and press <**Enter**> in the main menu.

Step 2: The Symantec Ghost window appears and starts to restore the last backup image (iei_user.GHO).

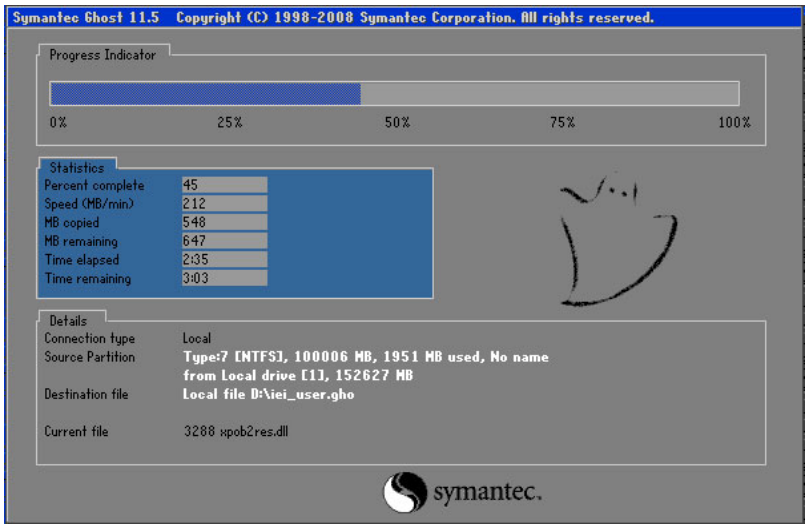


Figure B-31: Restore Backup

Step 3: The screen is shown as in **Figure B-32** when backup recovery is completed. Press any key to reboot the system.

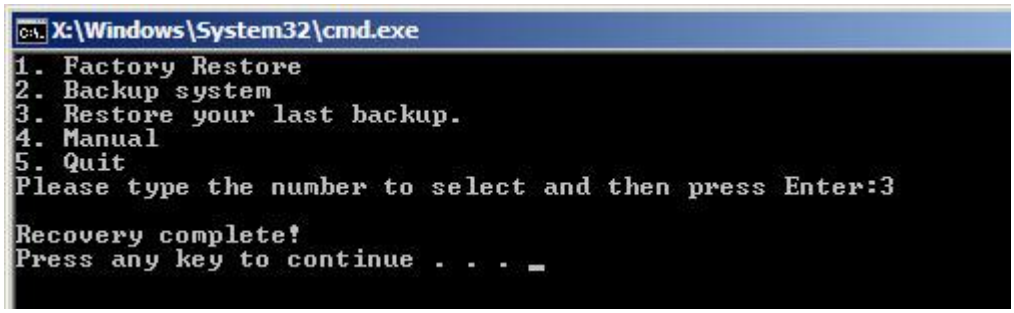

X:\Windows\System32\cmd.exe
1. Factory Restore
2. Backup system
3. Restore your last backup.
4. Manual
5. Quit
Please type the number to select and then press Enter:3
Recovery complete!
Press any key to continue . . .

Figure B-32: Restore System Backup Complete Window

B.4.4 Manual

To restore the last system backup, please follow the steps below.

Step 1: Type <**4**> and press <**Enter**> in the main menu.

Step 2: The Symantec Ghost window appears. Use the Ghost program to backup or recover the system manually.

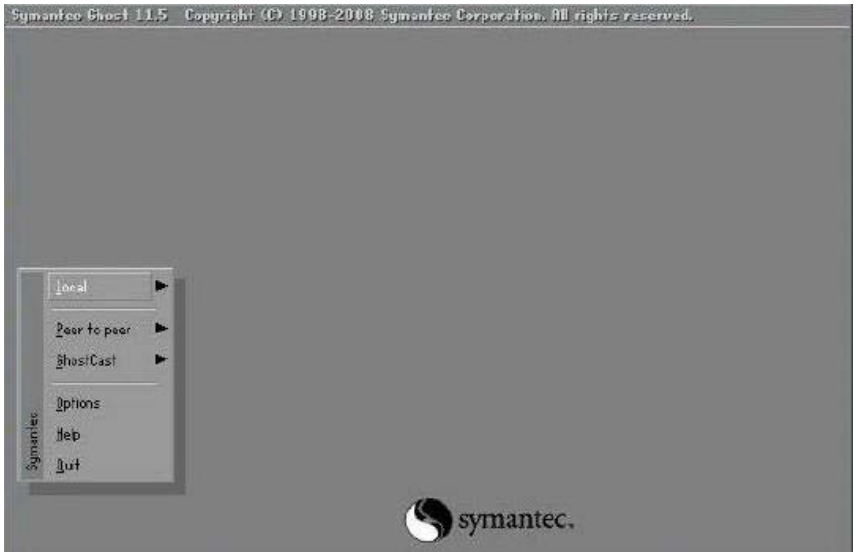


Figure B-33: Symantec Ghost Window

Step 3: When backup or recovery is completed, press any key to reboot the system.

B.5 Other Information

B.5.1 Using AHCI Mode or ALi M5283 / VIA VT6421A Controller

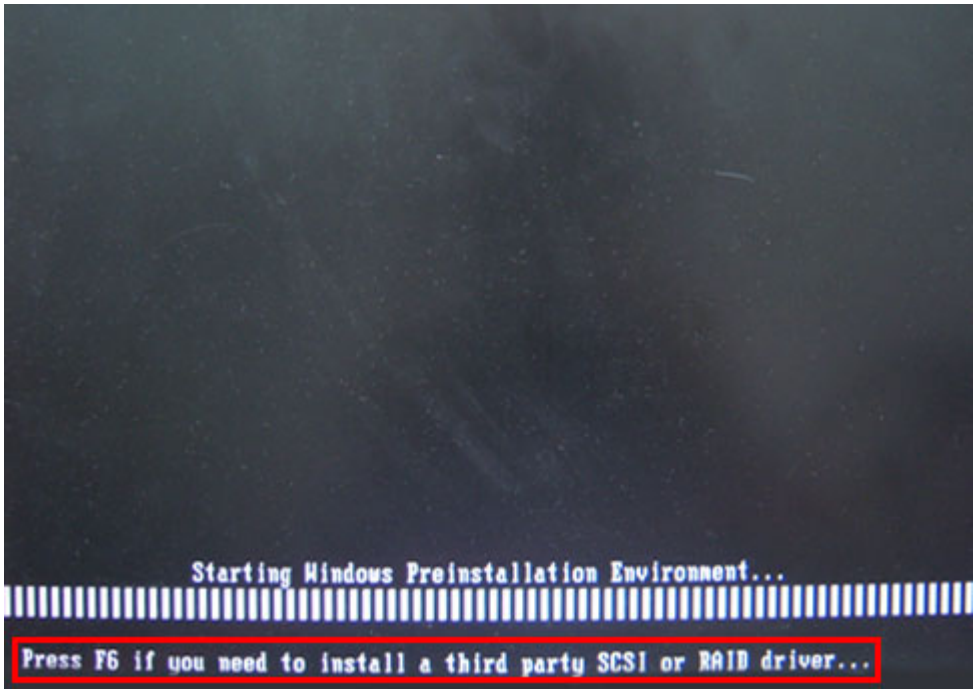
When the system uses AHCI mode or some specific SATA controllers such as ALi M5283 or VIA VT6421A, the SATA RAID/AHCI driver must be installed before using one key recovery. Please follow the steps below to install the SATA RAID/AHCI driver.

Step 1: Copy the SATA RAID/AHCI driver to a floppy disk and insert the floppy disk into a USB floppy disk drive. The SATA RAID/AHCI driver must be especially designed for the on-board SATA controller.

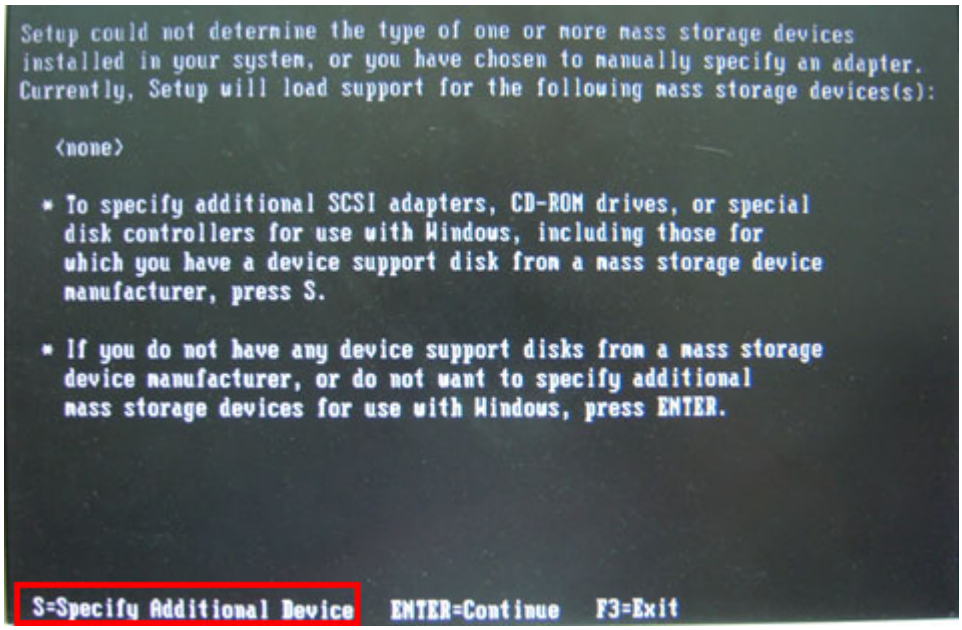
Step 2: Connect the USB floppy disk drive to the system.

Step 3: Insert the One Key Recovery CD into the system and boot the system from the CD.

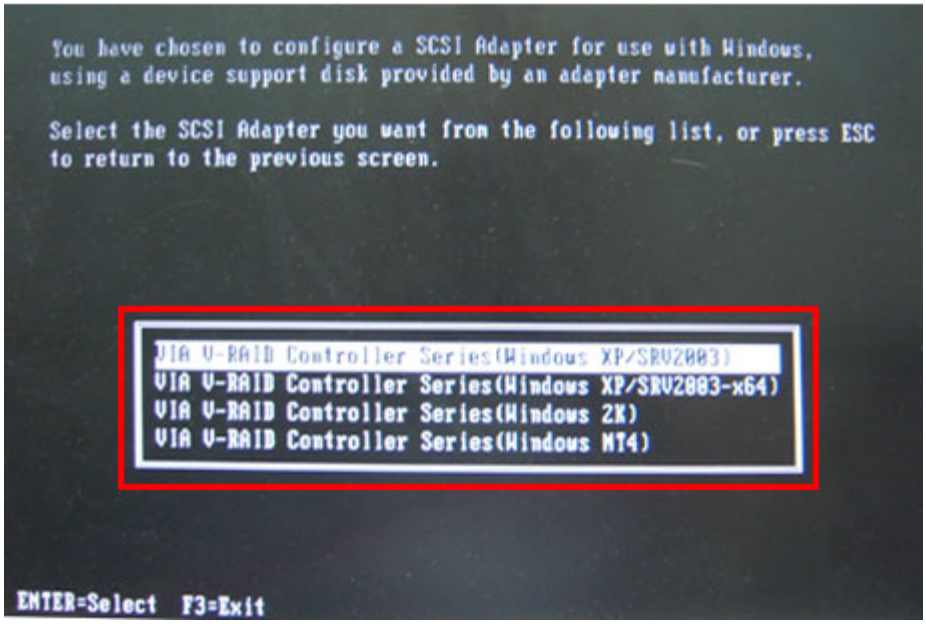
Step 4: When launching the recovery tool, press <**F6**>.



Step 5: When the following window appears, press <**S**> to select “Specify Additional Device”.


Setup could not determine the type of one or more mass storage devices installed in your system, or you have chosen to manually specify an adapter. Currently, Setup will load support for the following mass storage devices(s):
<none>
* To specify additional SCSI adapters, CD-ROM drives, or special disk controllers for use with Windows, including those for which you have a device support disk from a mass storage device manufacturer, press S.
* If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows, press ENTER.
S=Specify Additional Device
ENTER=Continue
F3=Exit

Step 6: In the following window, select a SATA controller mode used in the system. Then press <**Enter**>. The user can now start using the SATA HDD.


You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer.
Select the SCSI Adapter you want from the following list, or press ESC to return to the previous screen.
VIA V-RAID Controller Series(Windows XP/SRV2003)
VIA V-RAID Controller Series(Windows XP/SRV2003-x64)
VIA V-RAID Controller Series(Windows 2K)
VIA V-RAID Controller Series(Windows NT4)
ENTER=Select
F3=Exit

Step 7: After pressing <Enter>, the system will get into the recovery tool setup menu. Continue to follow the setup procedure from **Step 4** in **Section B.2.2 Create Partitions** to finish the whole setup process.

B.5.2 System Memory Requirement

To be able to access the recovery tool by pressing <**F3**> while booting up the system, please make sure to have enough system memory. The minimum memory requirement is listed below.

- **Using Award BIOS**: 128 MB system memory
- **Using AMI BIOS**: 512 MB system memory.

Appendix

C

BIOS Options

Below is a list of BIOS configuration options in the BIOS chapter.

BIOS Information **69**
System Date [xx/xx/xx] **69**
System Time [xx:xx:xx] **70**
Hyper Threading [Disabled] **71**
ATA Or IDE Configurations [Ehanced] **72**
Configure SATA as [IDE] **73**
USB Devices **73**
Legacy USB Support [Enabled] **73**
PC Health Status **74**
Mode Setting [Full On Mode] **75**
Temperature of Start [070] **76**
Temperature of Off [060] **76**
Start PWM [100] **76**
Slope PWM [1 PWM] **76**
Auto Recovery Function [Disabled] **77**
RTL8102 PXE Boot [Disabled] **78**
HD Audio Controller [Enabled] **80**
USB Function [Enabled] **80**
USB 2.0 (EHCI) Support [Enabled] **81**
Set Spread Spectrum Function [Disabled] **81**
DVMT Mode Select [DVMT Mode] **81**
DVMT/FIXED Memory [Maximum] **82**
IGD - Boot Type [VBIOS Default] **82**
Bootup NumLock State [On] **83**
Quiet Boot [Enabled] **84**
Boot Option #1 [SATA: FiD 1.8 SATA…] **84**
Hard Drive BBS Priorities **84**
Administrator Password **85**
User Password **85**
Save Changes and Reset **85**
Discard Changes and Reset **85**
Restore Defaults **86**
Save as User Defaults **86**

Restore User Defaults 86

Appendix

D

Terminology

AC '97	Audio Codec 97 (AC'97) refers to a codec standard developed by Intel® in 1997.
ACPI	Advanced Configuration and Power Interface (ACPI) is an OS-directed configuration, power management, and thermal management interface.
AHCI	Advanced Host Controller Interface (AHCI) is a SATA Host controller register-level interface.
ATA	The Advanced Technology Attachment (ATA) interface connects storage devices including hard disks and CD-ROM drives to a computer.
ARMD	An ATAPI Removable Media Device (ARMD) is any ATAPI device that supports removable media, besides CD and DVD drives.
ASKIR	Amplitude Shift Keyed Infrared (ASKIR) is a form of modulation that represents a digital signal by varying the amplitude ("volume") of the signal. A low amplitude signal represents a binary 0, while a high amplitude signal represents a binary 1.
BIOS	The Basic Input/Output System (BIOS) is firmware that is first run when the computer is turned on and can be configured by the end user
CODEC	The Compressor-Decompressor (CODEC) encodes and decodes digital audio data on the system.
CompactFlash®	CompactFlash® is a solid-state storage device. CompactFlash® devices use flash memory in a standard size enclosure. Type II is thicker than Type I, but a Type II slot can support both types.
CMOS	Complimentary metal-oxide-conductor is an integrated circuit used in chips like static RAM and microprocessors.
COM	COM refers to serial ports. Serial ports offer serial communication to expansion devices. The serial port on a personal computer is usually a male DB-9 connector.
DAC	The Digital-to-Analog Converter (DAC) converts digital signals to analog signals.
DDR	Double Data Rate refers to a data bus transferring data on both the rising and falling edges of the clock signal.

DMA	Direct Memory Access (DMA) enables some peripheral devices to bypass the system processor and communicate directly with the system memory.
DIMM	Dual Inline Memory Modules are a type of RAM that offer a 64-bit data bus and have separate electrical contacts on each side of the module.
DIO	The digital inputs and digital outputs are general control signals that control the on/off circuit of external devices or TTL devices. Data can be read or written to the selected address to enable the DIO functions.
EHCI	The Enhanced Host Controller Interface (EHCI) specification is a register-level interface description for USB 2.0 Host Controllers.
EIDE	Enhanced IDE (EIDE) is a newer IDE interface standard that has data transfer rates between 4.0 MBps and 16.6 MBps.
EIST	Enhanced Intel® SpeedStep Technology (EIST) allows users to modify the power consumption levels and processor performance through application software. The application software changes the bus-to-core frequency ratio and the processor core voltage.
FSB	The Front Side Bus (FSB) is the bi-directional communication channel between the processor and the Northbridge chipset.
GbE	Gigabit Ethernet (GbE) is an Ethernet version that transfers data at 1.0 Gbps and complies with the IEEE 802.3-2005 standard.
GPIO	General purpose input
HDD	Hard disk drive (HDD) is a type of magnetic, non-volatile computer storage device that stores digitally encoded data.
ICH	The Input/Ouput Control Hub (ICH) is an Intel® Southbridge chipset.
IrDA	Infrared Data Association (IrDA) specify infrared data transmission protocols used to enable electronic devices to wirelessly communicate with each other.
L1 Cache	The Level 1 Cache (L1 Cache) is a small memory cache built into the system processor.
L2 Cache	The Level 2 Cache (L2 Cache) is an external processor memory cache.

LCD	Liquid crystal display (LCD) is a flat, low-power display device that consists of two polarizing plates with a liquid crystal panel in between.
LVDS	Low-voltage differential signaling (LVDS) is a dual-wire, high-speed differential electrical signaling system commonly used to connect LCD displays to a computer.
POST	The Power-on Self Test (POST) is the pre-boot actions the system performs when the system is turned-on.
RAM	Random Access Memory (RAM) is volatile memory that loses data when power is lost. RAM has very fast data transfer rates compared to other storage like hard drives.
SATA	Serial ATA (SATA) is a serial communications bus designed for data transfers between storage devices and the computer chipsets. The SATA bus has transfer speeds up to 1.5 Gbps and the SATA II bus has data transfer speeds of up to 3.0 Gbps.
S.M.A.R.T	Self Monitoring Analysis and Reporting Technology (S.M.A.R.T) refers to automatic status checking technology implemented on hard disk drives.
UART	Universal Asynchronous Receiver-transmitter (UART) is responsible for asynchronous communications on the system and manages the system's serial communication (COM) ports.
UHCI	The Universal Host Controller Interface (UHCI) specification is a register-level interface description for USB 1.1 Host Controllers.
USB	The Universal Serial Bus (USB) is an external bus standard for interfacing devices. USB 1.1 supports 12Mbps data transfer rates and USB 2.0 supports 480Mbps data transfer rates.
VGA	The Video Graphics Array (VGA) is a graphics display system developed by IBM.

Appendix

E

Watchdog Timer

NOTE:

The following discussion applies to DOS environment. IEI support is contacted or the IEI website visited for specific drivers for more sophisticated operating systems, e.g., Windows and Linux.

The Watchdog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMIs or a software bug. When the CPU stops working correctly, Watchdog Timer either performs a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state.

A BIOS function call (INT 15H) is used to control the Watchdog Timer.

INT 15H:

AH – 6FH Sub-function:	
AL – 2:	Sets the Watchdog Timer's period.
BL:	Time-out value (Its unit-second is dependent on the item "Watchdog Timer unit select" in CMOS setup).

Table E-1: AH-6FH Sub-function

Call sub-function 2 to set the time-out period of Watchdog Timer first. If the time-out value is not zero, the Watchdog Timer starts counting down. When the timer value reaches zero, the system resets. To ensure that this reset condition does not occur, calling sub-function 2 must periodically refresh the Watchdog Timer. However, the watchdog timer is disabled if the time-out value is set to zero.

A tolerance of at least 10% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time-consuming.

NOTE:

When exiting a program it is necessary to disable the Watchdog Timer, otherwise the system resets.

Example program:

```
; INITIAL TIMER PERIOD COUNTER
;
W_LOOP:

        MOV     AX, 6F02H       ;setting the time-out value
        MOV     BL, 30          ;time-out value is 48 seconds
        INT     15H
;
; ADD THE APPLICATION PROGRAM HERE
;
        CMP     EXIT_AP, 1      ;is the application over?
        JNE     W_LOOP          ;No, restart the application

        MOV     AX, 6F02H       ;disable Watchdog Timer
        MOV     BL, 0           ;
        INT     15H
;
; EXIT ;
```

Appendix

F

Hazardous Materials Disclosure

F.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	X	O	O	O	O	X
Display	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Power Supply Assemblies	X	O	O	O	O	X
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有"环境友好使用期限"的标签，此期限是估算这些物质"不会有泄漏或突变"的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	X	O	O	O	O	X
显示	X	O	O	O	O	X
印刷电路板	X	O	O	O	O	X
金属螺帽	X	O	O	O	O	O
电缆组装	X	O	O	O	O	X
风扇组装	X	O	O	O	O	X
电力供应组装	X	O	O	O	O	X
电池	O	O	O	O	O	O
O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。						